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THE RELATION OF THE SMALL OBSTRUCTIVE PROSTATE TO CERTAIN OTHER BLADDER CONDITIONS*

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THE part that the small fibrous prostate may play as a cause of urinary obstruction seems to be fairly well recognized. It has been my experience, however, that certain conditions which are secondary to urinary obstruction in general, and whose dependence upon this condition is usually recognized when this obstruction is due to a hypertrophied prostate, are often overlooked when the obstruction is the result of a small prostate. There have come under my notice a considerable number of these instances in which conditions that were secondary to small obstructing prostates had been recognized but in which the relation that the prostate bore to them had not been clearly appreciated. The secondary conditions that I have seen most often are stone in the bladder and diverticulum of the bladder: there are others that are less common but which I shall not consider in this paper. I shall report in brief two illustrative cases.

CASE I. A married man, 49 years old, seen in 1922, who had had several attacks of urethritis in his youth. Sixteen or seventeen years before he began with burning on micturition and the passage of phosphatic material at the end of urination. He was supposed to have a stricture and was treated for it. A year before increased difficulty in urination had forced him to give up business. Cystoscopy had shown a large stone in his bladder. This was removed, by suprapubic incision, in a distant city. The suprapubic incision was very difficult to close, taking many weeks. When it finally did close, the patient had a retention and the suprapubic incision was reopened. After the use of a Kollmann dilator and sounds, for some time, the suprapubic wound closed tightly, but his urine remained turbid; urination was difficult, and the urine was passed in a small, fine stream. Shortly after, when this man came under my care, he had beside his difficulty in urination a ten-ounce residual of turbid urine; his prostate showed no change in either its size or consistency that I could recognize. Cystoscopy showed a hypertrophy of the muscle bundles of the inner layer of his bladder; there was a suggestion of an anterior commissure; his reflexes showed no change; there were one or two little cellules in his bladder but no diverticula. He was advised operation but he wished to wait to see if he would not gradually improve without it. Six months later he returned, in much the same condition, and I removed by perineal operation several bits of prostatic tissue as large as the tip of my little finger and cut down a tight bladder outlet. On leaving the hospital five weeks later, he was greatly relieved as regards his frequency and discomfort and showed but one-half ounce of residual The report on the tissue was: "A microscopic examination shows hyperplasia of the gland tubules and papillary ingrowths of their lining epithelium. There are focal areas of small round-cell infiltration in the stroma. There is no evidence of malignant disease. Diagnosis: adenomatous hypertrophy." Within the past week I have heard from this man and he reports that he has been very comfortable ever since operation. This case is quite typical of several that I have seen; in none of which was it recognized at first that the residual urine was the result of obstruction due to a small prostate and that the stone was secondary to the residual. Most of them had been operated upon at least once unsuccessfully; in some instances by me.

CASE II. A man of 54 was referred with the diagnosis of diverticulum on the left side of his bladder. His history was that of frequency of urination for as long as he could remember, also of getting up one or two times at night. As far back as he could remember he had had attacks of "bladder trouble" but had not given up work for them. Ten days before I saw him it became necessary to catheterize him and this had been continued. He was found to have a quart or more of residual urine. Examination showed a turbid urine of which he could pass only a little; no increase in size of prostate; reflexes normal; bladder nearly to umbilicus; 40 ounces of residual urine. On cystoscopy his left ureter could only be seen with the bladder considerably dilated, with about 600 cc.; it was just on the edge of the opening of a diverticulum on his left side. The urines from both kidneys were normal. Pyelograms showed normal renal pelves. There was a little lateral lobe jutting into his bladder on his left. A cystogram showed a diverticulum on the left side that was fully as large as the bladder. The removal of the diverticulum and of the prostate was advised. Before beginning the first operation, which was done under ether, a ureter catheter was passed up the left ureter, a step that I consider a great help and safeguard, especially in cases where the ureter is near the opening of the diverticulum. A median suprapubic incision was made and the peritoneum separated from the bladder and diverticulum. Several openings in the peritoneum were made which were immediately closed. After the bladder had been opened and the mouth of the diverticulum located, the diverticulum was opened upon the finger and dissected from the bladder in its upper part; the opening in the bladder was then closed in two layers with catgut. The separation of the lower part of the diverticulum, which was very deep, was carried down some distance and then because of the intimate connection of its outer layer

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to the structures deep in the pelvis I contented myself with simply removing its thickened mucous lining. A large, rubber-covered wick was carried to the bottom of the extra vesical wound. A layer of tissue was sewed over the ureter at one point where the wall had been thinned in my dissection. The ureter catheter was left in the ureter and brought out the suprapubic wound as was a large rubber tube. The bladder outlet was found to be very tight and besides this there was a small, movable, intravesical lobe. During his convalescence this patient had a little tenderness in his left calf but no thickened vein that I could make out. A month after his first operation I removed, under spinal anesthesia, several small masses of prostate that were intra-urethral and which with the little intravesical mass weighed 10.5 grams. The bladder outlet was a dense diaphragm which I cut down some distance, leaving a free bladder opening. This man made a good recovery and left the hospital about three weeks later. He was able to void easily and had no residual. This was especially gratifying as he had a much thinned bladder wall. He reported at a later time that he was without symptoms. In this patient the correct diagnosis had been made but the etiology had not been determined; no operative treatment had been attempted.

It has been my experience that in a considerable proportion of diverticula of the bladder an obstruction at the bladder outlet has played a considerable part in the formation of the diverticulum. When this prostate is of the small type, its significance is often not appreciated, as has been the case in several instances that I have seen. In one case seen some months ago the suprapubic incision, following the removal of a diverticulum, would not remain closed until the small obstructive prostate had been removed.

A number of similar cases could be added to the reported ones but these serve to illustrate my point sufficiently; namely, that in cases of stone in the bladder or diverticulum of the bladder, one should consider the possibility of a small obstructing prostate playing a part in the etiology.

In a case of stone in the bladder in which there is a considerable residual urine one should consider the possibility that prostatic obstruction may be the underlying cause; in the case of any large diverticulum, with a history of trouble extending over years, there exists a general suspicion that there probably is, beside the predisposing cause, whatever that may be, some obstructive element that has led to its progressive development.

In patients where the prostate shows little increase in size, as felt by rectum, there may still be obstruction at the bladder outlet due to several conditions; this obstruction may be due to a tight diaphragm-like bladder outlet that impedes the passage of urine or to a prostate that is rather tightly shrunken around the prostatic urethra in such a way as to contract it markedly; another common type of obstruction is where there are little irregular fibroid tumors of the prostate which do not jut back into the bladder in the least but are entirely in the prostatic urethra; this represents the so-called "intra-urethral" type of hypertrophy. These little fibroids may not be bigger than a hazel nut. Besides these there is the little movable intravesical lobe that acts as a ball-valve. All these types may produce obstruction.

Two of the signs upon which we depend a good deal in the recognition of the ordinary obstructing prostate, the increase in size of the gland as felt by rectum and the increased length of the urethra, are not present in cases of the small fibrous prostate. The presence of a residual urine, together with the absence of changes in the reflexes, signs upon which we depend to a certain degree in making a diagnosis in cases of urinary obstruction with a large prostatic overgrowth are also seen in these cases of obstruction with the small prostate and are of relatively greater diagnostic importance in cases of this type. In some cases an increased density in the consistency of the prostate as felt by rectum is quite apparent; in others it is not. The increased resistance said to be offered by the contracted bladder outlet to the removal of a gum elastic bougie à boule that has been passed into the bladder is not a sign of great diagnostic significance in my experience. A cystoscopic examination will often give some help; thus a bladder showing a hypertrophied condition of its inner muscle bundles, due to over-work, is suggestive of obstruction at the outlet; the presence of a commissure or of any little irregularity about the bladder outlet, as well as the raising of the bladder outlet above the level of the bladder floor are suggestive; all these have a certain amount of diagnostic weight though no particular one could be considered absolutely diagnostic; however, the presence of several has a good deal of suggestive value. Now and then it will not be until such time as a bladder, from which one has removed a stone or from which one has dissected a diverticulum, refuses to close, or in which after it has been made to close with great difficulty one finds a considerable residual urine, that the nature of the condition will be evident. At this time it is still possible, fortunately, to rectify the condition with little, if any, detriment to the patient if only it is recognized.

In closing I would like to call attention to the fact that the obstruction produced by any of the several types of a small prostate, may be an element in the causation of stones in the bladder and of diverticula of the bladder; that unless this underlying condition is recognized and remedied the patient will not get the relief he would otherwise have.

ORIGINAL ARTICLES

THE SIGNIFICANCE OF BLOOD SEDIMENTATION TIME IN GYNECOLOGY AND OBSTETRICS*

BY I. H. NOYES, M.D., F.A.C.S., AND ANTHONY CORVESE, M.D.

By the term blood sedimentation time is meant the number of minutes required for the red cells to separate from a definite quantity of citrated blood placed in a standard tube and using a standard technique. John Hunter[1] more than a century and a quarter ago observed that the speed of sedimentation varied in different specimens of blood. From 1830 to 1840 this reaction received considerable attention from Müller[2], Davy[3] and Nasse[4] but apparently they were unable to arrive at any definite conclusions regarding its nature or practical value. Little interest was shown in the subject from that time to 1918 when Fahraeus[5] published his observations that the sedimentation time varied considerably at different periods of pregnancy. Later both he and Linzenmeier[6] studied the reaction in inflammatory processes and to the latter must be given credit for devising a method which makes the test simple and accurate and for studying its diagnostic and therapeutic value.

Regarding the theory of the phenomenon, Mikliz-Radecki[7], Risse[8] and Fahraeus[5] maintain that the cause is due to the instability in the ratio of the albumin and globulin fractions of the serum of the patients affected. They have found that there is a decrease in the albumin fractions and increase in the globulin and fibrinogen elements. This condition results in an increase in the viscosity of the blood with a succeeding loss of surface tension.

An additional factor is suggested by Vorschutz[9] and Clauser[10], who maintain that there is a loss in the electric charge in the red blood corpuscles which is brought about by two factors, namely, a decrease in surface tension and increase in the blood lipoids. Furthermore, a secondary factor of anaemia is considered by Schumaker and Vogel[11], and Clauser[10]. These authors hold that in anaemia there are accompanying changes in the blood which will modify the sedimentation time, which variation is not to be considered as an evidence of inflammation.

As to the causes for the changes in the physicochemical balance in the blood stream, there are several suggestions offered. Rothe[12] thinks that the resorption of decomposition products resulting from such conditions as inflammation, fractures, sterile wounds, pregnancy and malignant tumors is the immediate cause bringing about a change in the sedimentation time.

Friedlaender[13] of Detroit took up the work in this country and in 1924 published the results of his studies of the sedimentation time in over 1500 cases. His conclusions are as follows:

1. Although the blood sedimentation test yields no practical results for the diagnosis of pregnancy until a general biologic reaction has taken place, i. e., after the fourth month, its negative findings are of material aid in differentiating pregnancy from simple tumors after the fourth month.
2. It is of some aid in diagnosing unruptured ectopic.
3. Ruptured ectopic, having about the same sedimentation time as pelvic inflammatory conditions, must be diagnosed by exclusion.
4. The diagnosis of pelvic inflammatory conditions can readily be confirmed by the test.
5. The reaction is especially valuable in gynecology to determine whether a patient with an inflammatory adnexal disease, but with a normal temperature and a normal blood count, should be subjected to operation. A sedimentation time under 30 minutes means active infection, under one hour latent infection and the patient must not be operated upon. However, a sedimentation time of over two hours excludes all possibility of a latent or active infection and the patient can safely undergo operation.
6. No dilation, curettage or other surgical interference should be undertaken before a sedimentation test has been made in order to exclude latent infection of the genital organs.
7. The value of the test is corroborated by its application to medical cases, inasmuch as all such cases which involve an infectious process show a great decrease in sedimentation time.

Since the publication of Friedlaender's paper, articles have appeared in American literature by Baer and Reis[14], Cherry[15], Schmitz[16] and others. In their views these authors are in some respects at variance with Friedlaender and with one another.

Schmitz observed the reaction in 80 gynecological cases afflicted with a variety of pathological conditions and states that the test should not be used in the differential diagnosis of benign and malignant new growths or of inflammatory swellings and myomata and that clinical observations and blood analysis are of primary importance in determining the time of safe operability in diseases of the female pelvic organs.

Cherry concludes that a sedimentation time of over 150 minutes is normal for healthy individuals. He operated upon 26 patients for pelvic inflammatory conditions, in all of whom the sedimentation time was less than 30 minutes. There was no mortality and the average morbidity was 18.2 days. He believes that in pelvic infection the leucocyte count is a more reliable indicator of the degree and virulence of the infecting organism and more dependable as a

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means to determine the most suitable time to interfere surgically.

Baer and Reis found the sedimentation time to be from 132 to 370 minutes in normal women. They consider the test to be an inaccurate method of diagnosing early pregnancy. Although low enough after the 20th week to be distinctive if not diagnostic, they agree that then the diagnosis can usually be established without it. They believe it to be of value in cases of abortion in progress or incomplete abortion in determining the presence or absence of infection. Also that it is of prognostic value in cases of sepsis, whether puerperal, postabortive or postoperative.

In our own work in this field we have employed the Linzenmeier technique, which is briefly as follows:

Two-tenths of a cubic centimeter of freshly prepared sterile 5% sodium citrate solution is drawn into a clean dry sterile hypodermic syringe with 0.1 c.c. markings. Eight-tenths of a cubic centimeter of blood from a superficial vein at the elbow is then drawn into the same syringe, making the total contents one cubic centimeter. The blood and sodium citrate solution are slowly mixed in the syringe and the mixture then transferred to a clean dry *sedimentation* tube and allowed to stand at room temperature. The time is taken when the mixture is placed in the tube and again when the line of demarcation between the red corpuscles and the plasma reaches the 18 mm. mark. This interval in minutes is the sedimentation time.

The test was made 197 times on 146 patients, of whom several were apparently normal healthy individuals, while the others were afflicted with one or more of a wide variety of diseased conditions as shown in Table 1.

TABLE 1

Number of patients		146
Number of tests made		197
Normal controls		6
Diseased conditions		142
Abortion	14	
Amenorrhea	3	
Appendicitis, chronic	3	
Carcinoma of cervix, untreated	1	
Carcinoma of cervix, after radium	1	
Cholelithiasis	2	
Ectopic gestation	2	
Endocervicitis	25	
Fibroid of uterus	1	
Fibrosis uteri, after radium	1	
Metrorrhagia	6	
Ovarian cyst	7	
Pelvic inflammatory disease	44	
Perirectal abscess	1	
Pregnancy	27	
Puerperal state	1	
Retrocecal abscess	1	
Septicemia	1	
Syphilis, latent	1	

Table 2 shows the lowest sedimentation time for the normal cases to be slightly over 120 minutes which tends to substantiate the conclusions of other observers that when it is two hours or more the presence of an inflammatory condition can be excluded. This table also shows that such conditions as functional amenorrhea,

TABLE 2

Type of case	Number	Sedimentation time Low	High	Average
Normal controls	6	122M.	267M.	210M.
Metrorrhagia	5	86M.	275M.	155M.
Uterine fibroid	1			120M.
Amenorrhea (functional)	3	94M.	215M.	135M.
Appendicitis, chronic	3	240M.	314M.	271M.
Endocervicitis, chronic	17	75M.	289M.	147M.
Endocervicitis, acute	8	43M.	277M.	163M.

TABLE 3

PREGNANCY

Per. of Gest.	Uncomplicated	S. T. in Min.	Complicated	Complication	S. T. in Min.
1st month	1	152	0		
2nd month	0		2	Threat. abortion	180
				G. C. urethritis and cervicitis	95
3rd month	1	75	3	Threat. abortion	80
				Vomit. of preg.	69
				Dilated kidney pelvis and ureter	93
4th month	4	66, 112 114, 120	1	Threat. abortion	95
5th month	3	45, 90, 90	0		
6th month	3	56, 72, 77	1	Pyelitis, bilat.	60
7th month	3	50, 56, 60	1	G. C. urethritis	45
8th month	3	40, 42, 43	0		
9th month	3	48, 51, 80	0		
Beginning labor	1	33	0		

functional uterine bleeding and uncomplicated uterine fibroid have very little influence on sedimentation time. The same is apparently true of so-called "chronic appendicitis".

With endocervicitis, acute and chronic, some of the cases showed an appreciable decrease but the average remained well above the two hour period.

Table 3 shows that as pregnancy advances the sedimentation time becomes progressively lessened and that the particular complications encountered in our series apparently had little influence upon it.

Table 4 deals with the abortion cases and you will observe that, in some of these, sedimentation was very rapid. This pertains particularly to the infected type. Here also is shown the correlation between leucocytosis and sedimentation time. Case 3 in this series shows the greatest apparent discrepancy which may have been due to the presence of pulmonary tuberculosis. The temperature reaction would seem to be a less stable indicator of the severity of the infection than either the leucocyte count or the sedimentation time.

Table 5 indicates that in all cases where there is a definitely localized collection of pus in the pelvis one may expect to find a greatly diminished sedimentation time. Here again is shown the expected relationship between this test and the leucocytosis.

Table 6 gives the results of the test in acute and subacute infections of the pelvic cellular tissues where suppuration was never proven. In some of these however large indurated inflammatory masses were present in the pelvis and may have harbored small amounts of pus in their interiors. Once more we would call your attention to the inverse ratio between white count and sedimentation time and to the varying temperature reactions.

Table 7 deals with acute salpingitis, chiefly of gonorrheal origin. There were two postoperative deaths in this series. Case No. 4 was ambulatory and considered going home without operation. Temperature and white cell count

TABLE 4

ABORTION

	Type	Temp.	W. B. C.	S. T.	Remarks	Treatment	Recovery
1.	Complete	99.5	18,400	11M	Infected	No. op.	Unevent.
2.	Induced	100.5	14,200	15M	Chills	Sec. rem.	Unevent.
3.	Induced	99.2	7,000	17M	Pul. T. B.?		
4.	Threat.			31M		Sec. rem.	Unevent.
5.	Incomplete	99.8	17,800	33M		Sec. rem.	Unevent.
6.	Incomplete		17,600	48M	Missed ab.	Sec. rem.	Unevent.
7.	Incomplete	99.5	16,000	53M	Sapremia	Sec. rem.	Unevent.
8.	Incomplete	101.2	11,600	58M		Sec. rem.	Unevent.
9.	Threat.	99.2	11,600	58M		Left hosp. untreated	
10.	Induced		15,200	60M			
11.	Threat.		8,000	60M		Spont. ab.	Unevent.
12.	Incomplete	100.	6,000	78M		Curetted	Unevent.
13.	Induced	98.6	8,000	92M		Sec. rem.	Unevent.
14.	Incomplete	100.	14,400	225M		Sec. rem.	Unevent.

TABLE 5

PELVIC INFLAMMATORY DISEASE

PELVIC ABSCESS

	Etiology	Temp.	W. B. C.	S. T.	Operation	Result
1.	Puerperal infection	100.	24,600	10M	Incis. and drain.	Prolonged morbidity
2.	Undetermined	101.6	20,000	12M	Laparotomy	Prolonged morbidity
3.	G. C. infec.	100.4		18M	None	Left against advice
4.	Puerperal infection	102.	18,000	21M	Colpotomy (2)	Died 48 d. after op.
5.	Post op. (appendicitis)	102.	17,000	23M	Colpotomy	Recovery
6.	Undetermined			25M	Incis. and drain.	Died 26 d. after op.

indicated safe operability. Sedimentation time was 24 minutes, which is relatively rapid. Laparotomy at once disclosed the fact that the process was too acute for easy and safe operation and that further delay would have been far wiser. Case No. 10, the other death, was apparently a better risk in so far as operative findings were concerned, but pneumonia developed several days after operation and was complicated by empyema. Case No. 19 shows an apparent discrepancy in sedimentation time compared with temperature and white count which we are unable to explain.

Table 8 shows our findings in three cases of tubo-ovarian abscess, in one of infected pelvic hematocele and in four cases of chronic salpingitis. The results correspond with those which would be expected after observing the foregoing tables.

Table 9, which comprises the ovarian cysts,

TABLE 6

PELVIC INFLAMMATORY DISEASE
PELVIC CELLULITIS (Non-Suppurative)

	Etiology	Temp.	W. B. C.	S. T.	Operation	Result
1.	Induced abortion	101.	30,000	8M	None	Prolonged morbidity
2.	Undetermined		25,600	11M	None	
3.	Induced abortion	99.	13,400	13M	None	Prolonged morbidity
4.	Puerperal infection	103.	15,400	14M	None	Recovery
5.	Prob. G. C.		15,800	16M	Colpotomy (no pus)	Recovery
6.	Prob. G. C.	98.6	15,400	21M	None	Recovery
7.	Puerperal infection	99.	12,000	28M	None	Prolonged morbidity
8.	Undetermined	99.	10,400	31M	None	Recovery
9.	G. C. infec.			44M	None	Recovery
10.	Undetermined	101.4	10,600	61M	None	Recovery

TABLE 7

PELVIC INFLAMMATORY DISEASE
SALPINGITIS ACUTE

	Etiology	Temp.	W. B. C.	S. T.	Op.	Cond. of tubes	Result
1.	Undetermined	99.4	16,400	16M	Yes	Non-suppurative	Recovery
2.	Prob. G. C.	100.	25,600	23M	Yes	Non-suppurative	Recovery
3.	Prob. G. C.	99.	12,400	24M	Yes	Non-suppurative	Recovery
4.	Undetermined	99.	9,600	24M	Yes	Pyosalpinx	Death
5.	Undetermined	100.2		28M	No		Recovery
6.	G. C. infec.			28M	No		Recovery
7.	Prob. G. C.	100.	12,100	29M	Yes	Non-suppurative	Recovery
8.	G. C. infec.			30M	No		Recovery
9.	G. C. infec.	97.8		30M	No		Recovery
10.	Undetermined	98.6	9,800	31M	Yes	Hematosalpinx	Died (empyema)
11.	G. C. infec.	101.8	14,000	32M	No		Recovery
12.	G. C. infec.	100.	10,200	40M	No		Recovery
13.	G. C. infec.	99.3	10,000	40M	No		Recovery
14.	G. C. infec.	98.	16,000	42M	No		Recovery
15.	G. C. infec.	100.	14,800	42M	No		Recovery
16.	Prob. G. C.	100.	17,200	43M	No		Left ag'nst advice
17.	G. C. infec.	98.6	15,000	44M	No		Recovery
18.	G. C. infec.	98.		62M	No		Improved
19.	G. C. infec.	100.	16,000	200M	No		Recovery

shows a rather wide range in sedimentation time with a low of 29 minutes and a high of 210. Cases 1 and 3 had suffered with pain and exhibited clinical evidence of a complicating inflammatory condition, while Case 2 was acute-

gestation, one ruptured and the other a tubal abortion with free blood in the pelvis, the sedimentation time was greater than would have been expected in acute inflammatory conditions with similar clinical findings. Particularly is

TABLE 8

PELVIC INFLAMMATORY DISEASE

	Temp.	W. B. C.	S. T.	Operative Findings	Result
				TUBO-OVARIAN ABSCESS	
1.	97.5	15,600	13M	Hemorrhagic cyst of other ovary	Recovery
2.	99.5	11,200	15M	2 oz. of pus	Recovery
3.	100.	15,600	44M	Pus in both tubes	Recovery
				PELVIC HEMATOCELE, INFECTED	
1.	101.	17,200	18M	Hematosalpinx, unilateral	Recovery
				SALPINGITIS, CHRONIC	
1.	99.2	10,000	45M	Bilateral involvement	Recovery
2.			66M	No. op.	
3.		9,600	70M	No. op.	
4.			233M	No. op.	

TABLE 9

OVARIAN CYSTS (Operated)

	Type	Temp.	W. B. C.	S. T.	Complication
1.	Hemorrhagic cyst size of lemon	99.5	9,400	29M	Salpingitis, chr., bilat., prob. G. C.
2.	Single cyst size grapefruit	100.	15,000	35M	Acute twist of pedicle
3.	Single cyst size lemon	99.	8,800	45M	Appendicitis, chr., adherent
4.	Hemorrhagic cyst size tangerine	98.	14,000	140M	Salpingitis, chr., bilateral, G. C.
5.	Hemorrhagic cyst size tangerine	99.		150M	None
6.	Corpus luteum cyst	99.		210M	Varicose veins of broad ligaments

TABLE 10

Disease		Temp.	W. B. C.	S. T.	Remarks	Result
Ectopic gest.	(1)	99.	12,000	40M	Hematosalpinx, free blood	Recovery
	(2)	98.6	37,500	64M	Tube rupt., free blood	Recovery
Retrocecal abscess		100.	19,000	27M	2 oz. of pus	
Septicemia (strep. hem.)			7,800	26M	No op.	Death 13 d. after adm.
Carcinoma of cervix		98.	12,200	97M	Before radium	
		98.6	15,200	50M	2 d. after rad.	
Fibrosis uteri		98.6	7,200	80M	Before radium	
			8,600	33M	3 d. after rad.	
Cholelithiasis	(1)		9,800	12M	Colon bacilluria	Recovery
	(2)	98.8		60M	Ovarian cyst and appendicitis, ch.	Recovery

ly ill following a sudden twist in the pedicle of a moderate sized cyst which had been diagnosed several months before. These three cases gave sedimentation tests quite in contrast to those of the last three in the group but correlating reasonably well with the clinical findings.

Table 10 shows that in two cases of ectopic

this true of Case 2, in which the white count was 37,000 and the onset acute. This does not correspond with Friedlaender's statement that in ruptured ectopic the sedimentation time is about the same as in pelvic inflammatory conditions.

The case of retrocecal abscess exhibited the

rather rapid sedimentation which we have come to expect in all cases where pus is present.

Our single case of septicemia due to *Streptococcus Hemolyticus* followed a spontaneous abortion occurring during an attack of influenza. Notice the low white count which is not infrequently seen in virulent infections. Abdominal autopsy failed to reveal any area of localized infection and the pelvic organs were normal in appearance except for a tiny area of superficial ulceration on the uterine endometrium.

The next two cases show the sedimentation time before and after radium treatment, one in carcinoma of the cervix and one in fibrosis uteri. The marked decrease after radium is presumed to be due to absorption of broken down protein substances.

In two cases of cholelithiasis the sedimentation times were quite different. Case 1 is of some interest as the recorded history pointed particularly to the urinary tract as the chief offender. Investigation along this line failed to show much more than a colon bacilluria. Following pyelogram the patient was seized with an attack of epigastric pain accompanied by fever and vomiting, which seemed entirely too severe a reaction for so simple a procedure. The rapid sedimentation time made us doubly suspicious that we had overlooked some other focus. Films of the gall bladder proved that our suspicions were well founded.

CONCLUSIONS

1. In healthy adults the blood sedimentation time varies from two to four hours or more.

2. In normal uterine pregnancy sedimentation time diminishes as pregnancy advances.

3. A greatly decreased sedimentation time may be expected in all acute inflammatory conditions of the pelvis and in severe toxemias due to absorption of native or foreign proteins, bacterial or otherwise.

4. The test may prove to be an aid in diagnosing between acute pelvic inflammation and ruptured ectopic gestation when the results of a larger series of cases can be studied.

5. In pelvic inflammation a sedimentation time greater than 60 minutes is evidence against the presence of localized pus in the pelvis and one under 35 minutes usually indicates an active infection.

6. The sedimentation test alone should not be relied upon in determinig a safe time for laparotomy in acute pelvic inflammation as a sedimentation time of less than 30 minutes does not alway signify a bad prognosis or a protracted recovery. It is of value, however, when considered together with the temperature, leucocyte count and clinical findings.

7. This simple test is sufficiently dependable to warrant its use in gynecology in all cases where a leucocyte count is considered desirable.

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TREATMENT OF SPONTANEOUS PNEUMOTHORAX*

BY HERBERT F. GAMMONS, M.D.

RUPTURE of the lung as a complication of pulmonary tuberculosis continues to be a source of great annoyance to the physician and patient notwithstanding the optimistic reports in the literature.

A few years ago I reported a series of cases[1] and they have all died. I have not been able to closely follow these cases but I feel that the rupture of the lung was a cause of death in most of them.

During the past two years I have observed and treated five more cases, two of whom have died and the other three are living and two of them give a good prognosis. The one whose prognosis is grave had the rupture in the contralateral lung and extensive involvement in the diseased lung.

The two patients who died had a valvular

*From the Arkansas Tuberculosis Sanatorium, Dr. John Stewart, Superintendent.

type of rupture, both left-sided cases, and the general condition was very bad. There was no response to the cutaneous tuberculin test. In one of these the embarrassment of respiration was not great and the general condition was so bad that no attempt was made to deflate. The other patient was deflated often on account of embarrassment of respiration and circulation, but with very little benefit and this of a temporary nature.

The two who are living and in whom the prognosis is favorable both developed a pleural effusion which was negative on bacteriological examination. The general condition was good and there was a marked reaction to the cutaneous tuberculin test. One of these was a right side rupture and the other a left side.

It was necessary to aspirate the fluid in these cases at frequent intervals, and air was injected to take the place of the fluid withdrawn. After a few months the fluid ceased forming so rapidly and with the idea in mind that it would be best to keep the lungs that were ruptured collapsed to prevent recurrence of the rupture these were converted into artificial pneumothorax cases and at frequent intervals were tested with the manometer, and if the pressure in the pleural cavity was negative air was injected to cause a slight positive pressure. These patients with the positive skin tuberculin test who have been converted into artificial pneumothorax patients give hopes of eventually being able to work and in fact are able to do so now.

A study of these patients seems to bring out the following points:

First—Spontaneous pneumothorax occurring in a patient whose prognosis was unfavorable before the occurrence of this complication is invariably fatal.

Second—Patients who react to the skin tuberculin test and who develop an effusion offer the best prognosis.

Third—Deflation and aspiration should be practiced to relieve embarrassment of circulation and respiration.

Fourth—The ultimate recovery of the patient should be sought and prevention of recurrence of the rupture is best accomplished by converting these spontaneous into artificial pneumothorax cases. These patients should take artificial pneumothorax treatments as long as possible to administer it, whether it be two or ten years, or more.

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1 "Spontaneous Pneumothorax Complicating Pulmonary Tuberculosis." Boston Med. and Surg. Jour., May 9, 1918.

The Massachusetts Medical Society

THE CONTROL OF THE COMMUNICABLE DISEASES PREVALENT IN MASSACHUSETTS*

With a Study of the Mortality Due to Them During the Past Seventy-Five Years

BY EDWARD G. HUBER, M.D.

(Continued from page 862)

CONTENTS

17. Other Reportable Diseases

There are a number of other diseases which are reportable in Massachusetts and which, because of their limited prevalence, have not been considered as of sufficient importance to include in detail within the limits of this study. In some of these diseases, definite control measures may easily be applied, in others, very little can be accomplished in a preventive way. But when the latter is the case it is often because the disease has, for one reason or another, been too little studied, and reporting is necessary if we are to have opportunities to observe the disease. It is true that the practicing physician cannot see that reporting such cases causes any active benefit to accrue to the community in the line of prevention, and he probably feels that notification is a waste of time. But in the long run this is not true. In order to progress we must study cases and if a disease is comparatively infrequent it is especially desirable that the few existing cases be made known to the health authorities.

(a) *Actinomycosis*

This disease, of mycotic origin, is much more common than has been thought. Until very recently there has been no standard of nomenclature for the mycotic group, so that what has recently been designated as actinomycosis by the Committee on Nomenclature of the American Society of Bacteriologists, has in past years been included under a variety of diagnoses. Sanford has recently made a careful study of all the

*Published by the Committee on Public Health of the Massachusetts Medical Society.

cases reported in the literature and of all others he could trace. He concluded that about half these patients had really been in contact with cattle or in occupations that would predispose to the infection, assuming that man and beast get their infection from a common source. So far as is known at present, the chances of infection of an individual who chews straws, twigs, grasses, or grains, and is careless as to the care of his teeth are much greater than those of other persons. There is no incontrovertible evidence that cattle communicate the disease to each other, that man contracts it from cattle, nor that infected man can act as a source of contagion. The diagnosis is made clinically and by finding Actinomyces in the discharge from the lesion. Isolation of the patient is not needed but the discharges from the lesion should be burned. All such cases should be reported in order that they may be studied for there is still a great deal to be learned as to the source of the infection in both man and animals.

(b) *Anthrax*

Anthrax came into increased prominence a few years ago with the importation of infected brushes and of animal hair and bristles used in making brushes. The disease has long been a familiar one among animals, particularly sheep, and has played a very important part in the history of bacteriology and immunology. It occurs in man sporadically only, as a result of accidental infection through the skin, intestines, or lungs. The bacilli and spores, particularly the latter, are found in hair, hides, flesh, and feces of infected animals. Consequently those most liable to be infected are the persons who come in contact with infected animals and with their products, either as workers or as consumers of the manufactured article. The period of incubation is seven days; and communicability exists while there is a discharge from the lesion. Hides and hair from infected animals contain spores which are very resistant, not being killed by ordinary disinfecting processes.

Prompt recognition of the disease clinically, followed by laboratory confirmation, is essential to proper treatment. Notification of the health department should be prompt in order that the source of the infection may be found and others protected. The patient must be completely isolated until cured and all discharges from the lesion burned. Legislation strictly regulating the manufacture and sale of articles in which there is a possibility of anthrax contamination is a community health measure; the individual has no other means of protection. Reporting of cases by the attending physician is an important method of finding law violators.

(c) *Dysentery*

(1) Bacillary. This form of dysentery generally occurs in epidemics, particularly where there is overcrowding and uncleanliness, although sporadic cases occur. It is not improbable that many cases of infantile diarrhea are dysenteries of this type. The disease is acute and comparatively brief, bacilli disappear from the stools very quickly, and the diagnosis is not easily made. The bacillus exists in several types all of which belong in the typhoid group, biologically. The epidemiology is the same as for the typhoids except that in all probability contact plays a more important part than does water and that temporary carriers are more common. The same control measures should be taken as for typhoid except that vaccination is not practicable owing to the severe reaction given by dysentery vaccines.

(2) Protozoal. There are a number of protozoa which cause dysentery, but entameba histolytica is the principal one. The disease caused by it is not common in Massachusetts but cases occasionally occur. It was formerly thought to to be a tropical of sub-tropical disease but several surveys since the war have shown that it prevails to an unexpected extent in the temperate zone. The disease is always chronic, never epidemic, and differs from most other communicable diseases in that it cannot be contracted from an infected person, at least until the disease has existed for some time. During the early part of an infection the feces of the patient contain vegetative forms only. These are incapable of infecting another individual. Only cysts have the power of infecting, and therefore carriers (generally healthy) are solely responsible for th transmission of this disease. Dobell says that 7-10% of the population of Great Britain are infected with entameba histolytica, and are therefore carriers. These carriers are not "cyst carriers" but individuals in whom the parasite has established itself in equilibrium with its host, neither one harming the other, cysts only being discharged with the feces. The source of the infection is therefore the intestinal discharges of carriers. The mode of transmission is by contaminated drinking water, or food, hand to mouth transfer of infected material, or indirect transfer of cysts by flies or fomites. Fortunately amebic dysentery is not much of a problem for the health officer of Massachusetts, for the carriers may be very hard to find. Protection from the disease is obtained as in typhoid,—sanitary disposal of feces, and cleanliness.

(d) *Hookworm Disease*

This is another intestinal infestation which does not trouble Masachusetts. Infection of the individual most commonly takes place through the skin of the feet while walking barefoot in soil infested with the larvae of the hookworm. It may however be transmitted by drinking water containing larvae. Food may also be infected with the larvae, and cause the disease. But the

disease is mainly kept alive by the reservoir of infection existing in the poor whites and negroes of the south, who deposit their feces where most convenient and who wear shoes comparatively little. Soil thus infected may remain so for months, until freezing. The disease can only be definitely recognized by a microscopic examination of the feces. Control depends on sanitary disposal of feces, thus preventing soil pollution, on personal prophylaxis including the wearing of shoes, and on a campagn of education of the public.

(e) *Glanders*

This disease is occasionally transmitted from horse and mules to human beings. There are often mild unrecognized cases among those animals. Preventive measures are veterinary entirely, involving periodic ophthalmic tests of all horses and mules, followed where necessary by confirmatory complement fixation tests, destruction of reactors, and disinfection of stables and equipment. Notification of all human cases is a great aid in locating foci of infection.

(f) *Leprosy*

Leprosy is almost a curiosity except in certain localities, but occasionally cases do appear. It is generally accepted that the disease is communicable only after long intimate contact but Babes has expressed the opinion that changes are brought about in the lymph glands long before its well known lesions are manifest. Since the disease is apparently transmitted with such difficulty many of the states have been lax in legislation against it. The cause of the disease, B. leprae, is found in all lesions of skin and mucosa. No diagnosis is complete without bacteriological confirmation. The incubation period is unknown but communicability extends throughout the period of infection. Control is accomplished by the isolation for life or until cured, of all lepers. A National Leprosarium is provided but isolation in the home may be permitted if conditions are satisfactory.

(g) *Malaria*

Malaria is a local disease, and a rural one, and the few cases that occur in Massachusetts do not make up an appreciable reservoir of infection. The parasite requires ten to fourteen days to develop in the mosquito and unless infected persons and anopheles are both numerous, and the latter have free access to the former, the chances of transmission of the disease are small. Mosquito eradication in the north is therefore more of a nuisance problem. The diagnosis of malaria rests entirely on microscopic examination of blood smears. Patients must of course be carefully screened from mosquitoes, and vigorously treated until cured, to avoid making the individual a "carrier" who can infect mosquitoes who bite him; for the period of communicability persists as long as there are parasites in the peripheal circulation.

(h) *Ophthalmia Neonatorum*

Properly speaking, this disease should be included in a discussion of the venereal diseases but as its prophylaxis is distinct and definite, and since it is a reportable disease in itself, a few words will be devoted to it. The disease is gonorrheal, and its prophylaxis, namely, instillation of silver nitrate solution into the conjunctival sac at birth, is wholly dependable. Therefore, legislation requiring this treatment should be rigid and enforced. A large proportion of births in some rural districts are attended only by neighbors or midwives. Competent obstetricians are by no means always employed in cities, and therefore all cases of sore eyes in children under ten days of age should be reported. If no physician is employed, a representative of the health department should take smears and if positive the case should be referred to a clinic, for early recognition with proper subsequent treatment will prevent blindness.

(i) *Pellagra*

The etiology of this disease is not yet agreed upon, but it is thought to be a monotonous unbalanced diet. It is not frequent in this state, but all cases should be reported in order that their epidemiology may be studied.

(j) *Rabies*

Rabies is a world-wide disease, being most common where laws restricting dogs are either non-existent or poorly enforced. The disease is on the increase in this country, since legislation is lax. It was eradicated in England by enacting and enforcing the muzzling of dogs, with quarantine of dogs entering the country. Its extinction in the United States would be difficult because it is so prevalent among the wild animals of the canine species. But it is possible greatly to reduce the number of cases in man.

Transmission of the disease is mainly by dogs, who may convey the infection by means of their saliva a week or two before they have manifest rabies. The period of incubation is ordinarily from 20 to 60 days. Saliva from an infected dog may transmit the disease by means of the smallest abrasion on the skin of the recipient. It is therefore unsafe to handle sick dogs.

The diagnosis of the disease in dogs is made with certainty in the laboratory only. A dog which has bitten a person should not be killed, but isolated, chained up. If such a dog remains free from symptoms of rabies for three weeks it is safe to say he was not infected. If the dog was killed, or died while isolated, his head should be cut off and forwarded on ice to a laboratory. Instruments used in this operation, and the

hands, should be disinfected subsequent to the decapitation. The person bitten should receive Pasteur treatment until it has been proven that the dog was free from rabies. When rabies develops in an individual isolation is not essential but the attendant should be warned of the infectiousness of saliva and should carefully sterilize or burn all articles coming in contact with oral secretions.

The eradication of rabies is a community concern. If no one were infected by a rabid dog except his owner, it would be a personal matter. Restriction of dogs by licensing and muzzling has always aroused considerable wrath in this country, and since all laws need public backing, the subject has been much neglected. But there is no longer any valid excuse for so many cases of rabies, or of dog-bite requiring anti-rabic treatment, in human beings. Within the last few years it has been proven that dogs can be protected with one immunizing dose of virus. In Japan, where rabies is very prevalent, about two thirds of the dogs of Yokohama and Tokio were given this prophylaxis in 1918 and 1919, respectively. During the intervening time to 1922 there were 41 cases in inoculated dogs and 1699 cases in half as many uninoculated dogs in the same communities. Many of the 41 cases arose so soon after inoculation that it is evident the dogs were already infected at the time of administration of prophylaxis. In view of the success of this method of immunization of dogs, there seems no valid reason why there should not be legislation, strictly enforced, requiring dogs either to be muzzled at all times not in leash, or to be immunized. Any dog "lover" not willing to protect his own dog should by all means be prohibited from endangering other persons. Stray dogs should be destroyed.

A wound inflicted by an animal which might be rabid should be thoroughly cleansed and then cauterized, since the virus remains localized in the wound for some time before it progresses towards the central nervous system..

(k) *Septic Sore Throat*

Septic sore throat existed in epidemic form a few years ago, but very little has been heard of it since. It is supposed to be due to human streptococci being carried into the udders of cows and becoming seeded there, as Rosenau expresses it. The organisms may therefore exist in otherwise very clean milk, even certified milk. This disease furnishes the very best argument why all milk should be pasteurized. Transmission does not ordinarily take place directly from man to man, nevertheless cases should be isolated as in the case of diphtheria, for there is some suspicion that the disease is related to scarlet fever.

(l) *Tetanus*

Tetanus is one of the very few communicable diseases the causative organism of which, in the form of spores, may live for a long time outside the body. The bacillus is a normal inhabitant of the intestines of herbivora and it therefore is commonly found in the soil, particularly in manured soil. The mode of infection is by inoculation into a punctured or lacerated wound; the organism being an anaerobe does not live in a clean-cut wound open to the air. Wounds produced by blank cartridges are particularly prone to be the means of inoculating the disease and the tendency during the last two decades to introduce rational methods in Fourth of July celebrations has resulted in a marked decrease in July deaths from tetanus. The period of incubation is six to fourteen days. The patient is unable to communicate the disease except very rarely through his wound discharges. The disease is readily prevented in the great majority of cases. Superficial wounds should be thoroughly cleansed. Deep, lacerated wounds should be subjected to débridement. All persons having wounds in which tetanus is a possible complication should receive immediate antitoxin which, in extensive wounds should be repeated at intervals until the danger is over.

(m) *Trachoma*

Trachoma is fortunately not the problem in Massachusetts that it is in some other states. The work of McMullen in Kentucky and of Clark in Minnesota has shown a surprising prevalence of the disease. The former has shown that many cures can be obtained by vigorous treatment. It is communicable, being contracted by direct or indirect contact with the conjunctival or nasal secretions of infected individuals. The incubation period is unknown, as is the precise cause of the disease, but it is supposed that communicability exists during the entire period of conjunctival discharges. It is distinctly a disease of the poorer classes who live under more or less insanitary conditions. These people cannot afford to pay a physician for the special treatment required, consequently it is the duty of the state to provide clinics, where the disease prevails. Since it does not exist in Massachusetts to any noticeable extent, prompt notification of any case is particularly necessary, in order to prevent any extension from it. Physical examination of school children should search for evidence of trachoma. It is the duty of the U. S. P. H. S. to prevent the entrance of infected immigrants. Victims of the disease should be excluded from school and isolated unless conditions are such that contact with others is avoided. When cases are found it is the duty of the health department to search among the family and associates for other cases, and to give instructions on concurrent disinfection, personal

cleanliness, and the dangers of neglecting these precautions.

(n) *Trichinosis*

The rat is the normal host of Trichina spiralis, and with hogs, forms a vicious circle for the propagation of the parasite. Rats become infected at slaughter houses and butcher shops from eating infected material from hogs. The latter acquire the disease from eating rats, feces or infected offal. Man becomes infested by eating uncooked or poorly cooked pork containing trichinae. The adult worm lives in the small intestines. The embryos migrate into the voluntary muscles, there becoming encysted. The symptoms of the disease are caused by the migration and therefore the severity of clinical evidence of infestation depends on the number of embryos. The disease is not transmitted by the human host. The diagnosis must be made clinically, confirmed by microscopical examination of excised muscle tissue. Notification of the case to the health department enables the latter to investigate the source of the infection, with possible eradication of the focus. No quarantine measures are necessary except the sanitary disposal of the feces.

It is the duty of the community to control by inspection all slaughter houses in order to prevent the sale of trichinous pork. Education of the public concerning the dangers of uncooked or poorly cooked meat, not only because of trichina but also because of tapeworms; concerning the need for constant warfare against rats especially where hogs are kept; and concerning the necessity for avoiding feeding offal to hogs, is necessary wherever the disease is in danger of getting a foothold.

(o) *Asiatic Cholera, Yellow Fever, Plague, and Typhus*

These diseases have probably all existed in Massachusetts at one time or another. There is more or less constant danger of their return, but the efficient operation of a national maritime quarantine administered by the U. S. P. H. S. is effective in excluding them. The methods used are not of practical interest to the inland practitioner and are therefore not discussed in this study.

(p) *Other Diseases, Not Reportable*

There are a number of other communicable diseases not yet reportable by law, some of which do not occur in Massachusetts while others do. Of those which are found in this state few exist to any marked extent and they are therefore not comparable in public health importance with most of the diseases already discussed.

Among such diseases may be mentioned the following: Malta fever was first demonstrated in this country by Craig (1905) and Gentry and Ferenbaugh (1911) as a disease of goats transmitted by their milk and by contact. The possible identity of M. melitensis with the organism causing infectious abortion in cows is now receiving considerable attention. The use of pasteurized milk whether of goats or of cows is the necessary preventive measure. Infectious jaundice has been reported by Blumer as occurring in about two hundred epidemics in New York state in 1920-1922. Very little is known as to its epidemiology. Dengue is becoming more and more prevalent in the southern states. It does not exist in Masachusetts for the same reasons that obtain in the case of malaria. Rheumatic fever, possibly communicable, is still of unknown etiology and not a distinct diagnostic entity owing to the fact that many specific infections involve joint symptoms at one stage or another. Botulism probably should be notifiable so that the cause may be searched for and prevented from poisoning others. The summer diarrhea of infants is due to many causes, including B. dysenteriae, streptococci, and B. coli as well as improper feeding. Except for the pasteurization of milk, the control of this disease is in the hands of the family physician, and notification, even if complete, would not be of any advantage. Streptococcus infections of tonsils, pharynx, nasal mucosa, sinuses, middle ear, and bronchi are probably communicable but even if efficiently reported could not be controlled until people refrain from scattering droplets of secretion from the upper respiratory tract. Tularemia is a recently described disease of rodents, transmissible to other animals, and slightly resembling plague. It occurs in man from handling infected rabbits used for food.

In this connection the common cold deserves consideration at greater length. That term includes a number of acute infections of the upper respiratory tract; but the most usual application of this diagnosis is to an acute catarrhal inflammation of the nasal or nasopharyngeal mucosa. The disease is of no importance as far as mortality is concerned but it is worthy of attention for the following reasons:

1. Its tremendous morbidity. Few persons escape at least one attack each year, and many have several. The sick do not of their own volition often refrain from work on account of the simple "cold," but their work is less efficiently done, and they are considerably "below par" physically for the several days of the attack.
2. The simple cold often does not stop there, but goes on to one or more of many complications, among which are infections of the sinuses and the middle ear, laryngitis, bronchitis, and even pneumonia. Some of these are not self-limited, but become chronic, and infected sinuses may be veritable storehouses for a not inconsiderable flora.
3. Individuals suffering from a "cold," being much more inclined to sneeze and cough than those not ill, will, if they are careless, spread in their expelled droplets not only the organisms causing the cold but any other organisms they may be carrying.

4. It has been suggested that a cold may also have some at present unknown influence which favors the carrier state. It is possible that a symbiosis between the organism or organisms causing the cold and certain other pathogenic organisms may enhance the virulence of both.

There is as yet no definite knowledge concerning the cause of the common cold. Until comparatively recently it was thought that exposure to cold, drafts, sudden changes in temperature, fatigue, and like conditions caused the affection in some mechanical fashion. Since the evolution of bacteriology more and more importance has been ascribed to bacteria in general, in this connection. Some assert that an unknown organism is the sole cause and others believe that the chief etiological factor is some bacterium but that a lowering of resistance may be the decisive predisposing condition. There have been very many investigations to determine the nature of the causative organism, but owing to the varied flora existing under apparently normal conditions these studies have not yet been crowned with success. Foster's work a few years ago, when he seemed to have found a filterable virus which could reproduce the disease, has attracted much attention, but no further work along this line has been done. In all probability there are several etiologic factors, probably not all bacterial, which are guilty of causing the diseases making up the group. Vaughan believes the common cold is a protein sensitization.

The seasons, weather, and other meteorological conditions apparently have no effect on the incidence of the disease according to a careful study of 200 cases of Hodges. Very little accurate information is available concerning susceptibility, immunity, transmission, incubation period, length of period of infectiousness, etc., but the present investigation of the U. S. P. H. S. promises to furnish many reliable data. It is generally regarded as established that communicability is high, and that colds run through families, schools, camps, etc., rather rapidly. Direct and indirect contact, especially through droplets and contaminated eating utensils, are the vehicles which are believed to transmit the disease most frequently.

Common colds are apparently as far from control as is influenza. The symptoms are so slight generally that the patient ordinarily does not limit his activities to any appreciable extent. He goes about as usual, transmitting not only the germ causing his disease but any other pathogen he may be carrying. Until individuals refrain from spraying droplets about them and from disseminating their saliva in other ways the control of the diseases transmitted by exeretions of the upper respiratory tract seems hopeless. Education of the public is the only measure which gives even the faintest promise of success. Avoidance of crowded places and of insanitary eating places is the best prophylactic measure now known. If contact within a family is lessened to a minimum, and eating utensils are boiled after each meal, it is possible to prevent some transmission. Industrial establishments should be shown the advantages which would accrue to them as a result of a policy of keeping away from their work all employees who are suffering from any acute catarrhal condition of the upper air passages. This is particularly true in schools. Coryza, besides being a disease sui generis, is a prodromal symptom of several more serious diseases, and exclusion of all cases of common colds would result in removing from circulation virus of other, more dangerous diseases.

(To be continued)

SMITHSONIAN INSTITUTION EXHIBITS PROGRESS OF MEDICINE AND SURGERY

THE Smithsonian Institution has established a "Hall of Health" in the southeast court of the Gallery of Arts and Industries in the building of the National Museum at Washington, D. C.

A catalogue gives a description of the exhibits with a symposium of the history and growth of medicine and all allied vocations. Early operations in vogue thousands of years ago are illustrated, the work of barbaric surgeons and the management of hospitals in the early Christian Eras are referred to and many early beginnings of many modern practices are set forth.

The conception of this Hall of Health originated at a convention of the National Health Council several years ago and the present development has been carried on by Surgeon General Cumming and associates.

A POSSIBLE MENACE TO QUACK ADVERTISING

THE Federal Trade Commission has entered upon a campaign to stop fraudulent advertising. A test case is now pending in the courts and if the result is encouraging the work will be entered upon with vigor.

It has been estimated that the people are robbed of half a billion dollars each year by fraudulent medical advertisements.

The paper which publishes these untrue claims participates in the revenue.

We have appealed to one of our prominent newspapers by name asking that the custom followed by some high grade periodicals be adopted. Thus far no attention has been given to these suggestions.

We hope that the Federal Trade Commission will demonstrate activity and the courts act to protect the credulous public.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 12441

DYSPNEA IN AN OLD MAN WITH STRONG FAMILY HISTORY OF TUBERCULOSIS

MEDICAL DEPARTMENT

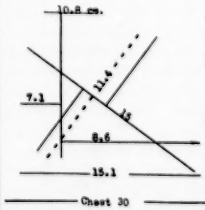
A dress designer sixty-four years old entered April 22 complaining of dyspnea. He first noticed this on exertion three or four years before admission. It had gradually increased and had forced him to give up all active exertion. Two years before admission he began taking digitalis with relief. For the past four months he had taken the tincture constantly, 5-20 drops three times a day. The January before admission his physician told him that his blood pressure was too low. April 19 his feet began to swell for the first time.

Five brothers and two sisters died of tuberculosis. The patient himself had never been very strong. Between seventeen and twenty-three he was ill and fainted, with repeated small hemorrhages from the lungs. He now rarely had colds or sore throats. Most of his life he had been troubled with indigestion and discomfort due to gas. Eighteen years before admission he had several attacks of sharp pain in the right upper quadrant, not radiating, relieved only by morphia. Three months before admission he had a similar attack, which he attributed to having taken iodine for five days by mistake instead of digitalis. For several months he had had slight difficulty in starting micturition and the urinary stream had been small. Fifteen years before admission he weighed 248 pounds, his best weight. A year ago he weighed 226 pounds, the summer before admission 212 pounds, three weeks before admission 220 pounds. He once took whiskey to excess, but had taken none for eighteen years.

Examination showed an obese elderly man propped up in bed, with cyanosis of the face and hands and dyspnea. The teeth were missing or bad. The tonsils were scarred and enlarged. There was slight general adenopathy. The cervical spine showed limited extension. There was kyphosis. The apex impulse of the heart was not located. The left border of percussion was uncertain because of stomach tympany. The sounds were of fair quality and were heard much louder to the right of the sternum. At time there were three beats and a pause, at other times the heart seemed to be fibrillating, rate 100. The aortic second sound was accentuated. The blood pressure was 160/89 to 140/70. Electrocardiogram showed partial auriculoventricular block, P-R interval .23 to .3 seconds, right bundle branch block, ventricular and auricular premature beats. The lungs showed moist râles throughout. The breath sounds were diminished at the left apex. The abdomen protruded, with bulging in the flanks. The upper half was tympanitic; the lower half and the flanks were dull. There was umbilical hernia. The legs were considerably swollen. The tibiae were sightly roughened. The rectal examination was not very satisfactory. The prostate seemed enlarged. The pupils were contracted and did not react to light. The knee-jerks were lively.

The urine was normal in amount. The day of admission after he voided sixteen ounces there was a residual of three ounces. The urine was cloudy and alkaline at two of three examinations, specific gravity 1.014 to 1.022, 7-15 leucocytes per high power field in two of three specimens of sediment. Renal function 30 per cent., slightly off color. Blood examination showed 11,600 to 8,600 leucocytes, 70 per cent. polynuclears, hemoglobin 85 per cent., slight achromia and slight variation in size within normal limits, platelets not very numerous. Two Wassermanns strongly positive. Non-protein nitrogen 36.3 milligrams.

X-ray showed the heart shadow distinctly increased in all diameters. Its outline was hazy and the various chambers were indistinct. There was marked increase in the supracardiac dullness. The aortic shadow was large in all diameters (see diagram). The sinuses were negative. The teeth were negative except for some evidence of pyorrhea.



Orders: see below.

The patient responded surprisingly well to rest and digitalis. By the 30th the dyspnea was almost gone and he could sleep almost flat on his back. He had slight coryza and sore throat the night of the 28th. His weight fell to 198 pounds. At his discharge, May 6, he was given orders to continue reducing and to have rest, digitalis, purgation and mild antiluetic treatment.

After leaving the hospital he rested for nine weeks. Then he resumed his work of designing, which he did in his own apartment. He found he seldom became overtired. He continued to

take digitalis and magnesium sulphate. He had no edema of the feet.

At Christmas he had an attack of "influenza" lasting two or three weeks, with sharp pain between his shoulders and general exhaustion and malaise, but no cyanosis, upper respiratory, gastro-intestinal, or neuromuscular involvement. He was not confined to bed. After his recovery he felt less vigorous than before the attack.

Two weeks before his second admission, March 21, two years after his discharge, he developed running nose and a distressing cough which made his chest sore. After taking medicine given by his physician he raised large amounts of brown mucus. He remained in bed most of the time, though he took care of himself. His diet consisted mostly of milk and a few things which his friends sent him. He gradually grew weaker and more dyspneic. The day before his readmission his feet began to swell for the first time since his previous hospital stay. For three days he had not slept. He thought he had lost forty pounds in the past two years.

Examination showed him in a very critical condition, with an acute respiratory infection in addition to his chronic condition. He was cyanotic, sitting up in a chair, obviously acutely decompensated. The heart was markedly enlarged to the left. The location of the apex impulse is not recorded. The left border of dullness was 12 centimeters from midsternum, 4 centimeters outside the midclavicular line. The right border is not recorded. The supracardiac dullness was 4.5 centimeters. The action was absolutely irregular. No murmurs were heard. The sounds were obscured by pulmonary râles. The blood pressure was about 150/70 to 150/80. Electrocardiogram showed auricular premature beats, rate 60-80, A = 85, inverted T_3, right bundle branch block as before, partial auriculoventricular block, P-R interval = .3 seconds. The premature beats were at times trigeminal, and occasionally one was blocked, with ventricular escape. The lungs showed fair resonance. There were moist râles throughout both chests except at the extreme apices. He was too ill for examination of the abdomen. There was no large amount of fluid. The legs showed moderate edema. The pupils were pinpoint (morphia ?) and did not react to light. The knee-jerks were normal.

The amount of urine was normal when recorded. The urine was cloudy and dark, specific gravity 1.027, a slight trace of albumin at the single examination; the sediment showed an occasional leucocyte and red blood corpuscle, many motile bacilli. Blood examination showed 9,800 leucocytes, 78 per cent. polynuclears, 70 per cent. hemoglobin, 4,200,000 reds, moderate anisocytosis and poikilocytosis, some polychromatophilia. Wassermann strongly positive. Nonprotein nitrogen 33 milligrams.

Orders: see below.

March 23 the patient died.

Orders, first admission: April 22. Digitalis grains one and a half three times a day until nausea or pulse to 60. (Use digifolin subcutaneously on days when he has magnesium sulphate.) Limit fluids to 1000 cubic centimeters. Castor oil minims five three times a day in capsules. Ice bag to abdomen. Chart all fluids. Karell diet. One and a half ounces of magnesium sulphate three times a week. Apex and radial pulse. Ten grains of veronal. April 23. Ten grains of veronal and ten grains of aspirin at bed time. April 25. Obesity diet, salt free. Limit fluids to 1000 cubic centimeters. One and a half grains of digitalis daily beginning April 28. Potassium iodide five drops three times a day. April 27 spray* to nose and throat every four hours p.r.n. Fifteen grains of aspirin every four hours.

Orders, second admission: March 21, Karell diet. 400 cubic centimeters of extra fluid. One ounce of magnesium sulphate daily. One and a half grains of digitalis three times a day. Absolute rest. The patient to be fed, helped on bed pan, etc. Morphia one-sixth of a grain subcutaneously with one one-hundredth of a grain of atropin subcutaneously at 5:20 and 9 p.m. March 22. One-fourth of a grain of morphia subcutaneously. Three grains of luminol by mouth. One dram of syrup of hydriodic acid three times a day. Three minims of gomenol three times a day. Abdominal swathe. Up in chair. Five grains of Dover's powders. Dial-ciba† one ampule intramuscularly at 9:20 and 12:30 p.m. Liquids ad libitum. One ounce of whiskey twice a day. Saturated solution of potassium iodide minims five three times a day. One and a half grains of digitalis daily. One and a half grains of luminol three times a day. March 23. Soft solid diet. One one-hundred fiftieth of a grain of scopolamin subcutaneously at 8:15 and one two-hundredth of a grain subcutaneously at 9:30. One half of a grain of codein by mouth.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

This is a man of sixty-four who comes in for heart symptoms,—dyspnea of four years' duration; he has taken digitalis with relief for a considerable period. He has a very strong family history of tuberculosis and has had symptoms

*Camphor grains two, menthol grains five, oil of eucalyptus minims five, liquid petrolatum one ounce.

†Dial-ciba: a proprietary hypnotic, di-allyl-barbituric acid.

suggesting tuberculosis in his younger life, but not for many years.

NOTES ON THE PHYSICAL EXAMINATION

The essential things are that he has a weak heart with no important murmurs, and a blood pressure of 160 over 80. The electrocardiogram shows interference with conduction in a number of different parts of the heart. The rest of the examination seems to show mostly passive congestion. Urine and blood are normal.

The X-ray shows a big heart and aorta and nothing else of importance.

He does very well under digitalis in the hospital; usually in the hospital the patient gets a great deal more digitalis in a short time, because under observation it is safe to push it.

I do not know what this attack at Christmas was. It might have been a pulmonary infarction, but he did not spit blood, and without that we cannot make that diagnosis.

At the second admission he was in a critical condition. The heart was much enlarged, the action absolutely irregular. The blood pressure was essentially as it was before. Electrocardiogram seems to show largely what it did before. The blood and urine were essentially normal except that there was some secondary anemia.

Both times he has had strongly positive Wassermanns. This time he was here only a couple of days, and in spite of a good deal of treatment died.

This was a cardiac case, left alone for some years. He entered this hospital once and after that got along for two years, then came in a second time and died.

DIFFERENTIAL DIAGNOSIS

The outstanding points in coming toward a diagnosis seem to me his age, the relatively high systolic blood pressure in spite of decompensation, the absence of any definite murmurs, and the positive Wassermanns. The two types of heart trouble we naturally think of are the syphilitic and hypertensive types. I do not see how we can make a diagnosis of syphilitic aortitis. He had no evidence of aortic valve involvement, of angina pectoris, or of aneurysm. X-ray shows the aorta enlarged but says nothing of aneurysm, which I think they would have been bound to do if they had seen anything of the kind. He may have a syphilitic aortitis without any affection of the aortic valve or of the coronaries and without angina. But if he has we cannot recognize it. On the whole it seems to me better to say that he did not have it. Syphilitic aortitis leading to death is not common at this age. It is commoner in younger people, middle-aged people.

It seems to me more probable therefore that the case is of the hypertensive type, that is to say, that at necropsy a big heart without valve lesions will be found. The rest of it will be passive congestion, except that we ought to have evidence of healed tuberculosis in the lung. This is just the sort of patient in whom we should expect it, with a strong family history of tuberculosis and with pulmonary hemorrhages in his youth. Aside from that I do not know anything to predict about the necropsy. He has had queer symptoms in the abdomen and queer symptoms in his upper posterior chest, but not enough to furnish any basis for diagnosis.

So I should say that he ought to have a hypertrophied and dilated heart without any other essential lesion, and passive congestion of all the organs, with healed pulmonary tuberculosis.

A PHYSICIAN: Do you expect any cardiac infarction?

DR. CABOT: I do not see why we should. But that is a condition which we can have post mortem without any characteristic symptoms, without any more than we have here. But on the other hand I do not see how we can diagnose it. What made you think of it?

A PHYSICIAN: The irregularity of the heart.

DR. CABOT: But any kind of heart trouble will give that.

Another thing to consider is fibrous myocarditis, because he has so much conduction trouble. This might perfectly well be due to myocarditis. But it is also true that these defects of conduction might exist without any demonstrable post mortem lesions.

A PHYSICIAN: Is there any sign of arteriosclerosis?

DR. CABOT: I do not see that there is. He is at an age when we should expect it.

DR. JAMES H. MEANS: Isn't the type of conduction difficulty which he had at his first entry rather suggestive of a fairly grave myocardial disturbance? He had intraventricular block. My impression is that persons who exhibit that very seldom live more than two or three years, that it really denotes a serious myocardial degeneration and carries a bad prognosis, in contrast with an auriculoventricular block, which may persist with pretty decent health for a good many years.

DR. CABOT: You know more than I do about it. I had been led from what Dr. Paul White has said to suppose that there is no electrocardiographic sign on the basis of which we can predict myocarditis. As to the prognosis, of course that is another point.

A PHYSICIAN: Will there be any gumma?

DR. CABOT: No, I am betting against that, simply on account of its rareness. I have not seen it for years.

A PHYSICIAN: If syphilis is not the cause of his trouble would you predict advanced coronary disease?

DR. CABOT: No, because of what I have just said to Dr. Means. He has not had distinct coronary symptoms, such as pain.

A PHYSICIAN: Was he under syphilitic treatment?

DR. CABOT: I take it that he was not. There is a little reference, but I do not think there was intensive treatment. I do not know why not.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Arteriosclerosis and hypertensive heart disease.
Myocardial insufficiency.
Heart block.
Auricular fibrillation.
Syphilis.
Bronchopneumonia?

DR. RICHARD C. CABOT'S DIAGNOSIS

Hypertensive heart disease.
Hypertrophy and dilatation of the heart.
Chronic passive congestion.
Healed pulmonary tuberculosis?

ANATOMIC DIAGNOSES

1. *Primary fatal lesions*

Arteriosclerosis and luetic aortitis.

2. *Secondary or terminal lesions*

Arteriosclerosis of the vessels of Willis.
Wet brain.
Hypertrophy and dilatation of the heart.
Chronic passive congestion.
Purulent bronchitis.
Bronchopneumonia.
Mural thrombus of the aorta.

3. *Historical landmarks*

Chronic pleuritis.
Slightly defective closure of the foramen ovale.
Cholelithiasis.
Chronic pericholecystitis.
Dilatation of the bile ducts.
Cysts of the kidneys.
Slight hypertrophy of the prostate.

DR. TRACY B. MALLORY: As to the question that Dr. Cabot brought up, of the healed tuberculosis, there were a few pleural adhesions found on the right side at the apex and posteriorly between the lower lobe and the diaphragm, also at the left apex. Elsewhere it was free, and Dr. Richardson found no evidence even of healed tuberculosis in the apices. The lungs were in general brownish red, spongy, a little leathery, and yielded considerable brown-red frothy fluid on section,—the lung of chronic passive congestion.

The pericardium was negative. The heart weighed 840 grams, much enlarged. The myocardium in gross was apparently of good color and consistency. The right ventricular wall measured four millimeters, the left fifteen. The cavities showed marked dilatation on both sides, the foramen ovale was not quite closed, the auricles negative. The mitral valve measured thirteen centimeters, which is rather increased, but was negative in appearance. The aortic valve was nine and a half centimeters, also a little increased, the tricuspid fifteen and the pulmonary ten. That is just a general proportional increase of all the valves.

The coronary arteries were capacious and free throughout, but showed a considerable amount of sclerosis and a little calcification in places. I judge from the record that there was no obstruction of the lumen however.

The ascending thoracic portion of the aorta showed marked fibrous and fibrocalcareous sclerosis, diffuse in places, where it was somewhat suggestive of lues. A short distance above the aortic cusps the ascending aorta showed a small adherent mural thrombus. The arch, descending thoracic and abdominal portions showed marked fibrous and fibrocalcareous sclerosis with scattered areas of atheroma. The circumference of the ascending was ten centimeters, of the descending eight centimeters, and of the abdominal six centimeters. The iliac arteries also showed sclerosis.

The liver was much enlarged, with the typical appearance of chronic passive congestion. The gall-bladder was small, the wall markedly thickened, and was surrounded by a mass of old adhesions. These extended to the colon and upper end of the duodenum. The mucosa of the bladder was smooth and negative. The bladder contained five stones which crushed under the thumb. The cystic duct was dilated. The spleen was enlarged, weighing 381 grams.

The kidneys showed a combined weight of 475 grams. The capsules stripped readily, the surfaces were fairly smooth, brownish red. They showed numerous rather small cysts. At the upper pole of the right kidney there was a large cyst five centimeters in diameter, and a smaller one in the lower pole of the right. The tissue was of good consistence, brown red, the markings quite plain, the cortex five millimeters.

The bladder was negative. The prostate showed slight enlargement of all lobes.

Culture from the heart's blood was negative.

Microscopic examination confirmed the diagnosis of luetic aortitis.

CASE 12442

A CASE OF CANCER OF THE COLON, WITH CANCER OF THE COLON AGAIN AFTER TEN YEARS

SURGICAL DEPARTMENT

A woman of forty-three entered for the first time August 25. Three years before admission

she had diarrhea lasting ten days. Within a month she began to have moderate abdominal pain. A physician found on examination a mass in the right lower quadrant at McBurney's point. The pain persisted, localized chiefly in the midclavicular region. She described it as a pulling or drawing sensation. Various diagnoses were made. For ten months she had taken morphia or codeia. Four months before admission the pain settled definitely in the right lower quadrant and remained there, very severe and constant, not relieved by ice packs or position. She had a tendency to periods of diarrhea lasting a week or two. She had never noted any blood or mucus or other abnormality in the stools. In three years her weight had fallen from 140 to 120. She had been told by physicians at various times that she was anemic.

Her father died of cancer at forty, her mother of pneumonia following operation for possible malignancy of the uterus. One uncle died of possible cancer.

The patient had scarlet fever and diphtheria at four years old. She had nervous headaches, especially with menstruation. She had tonsillitis five years before admission and again the next year, followed by lymphangitis and erysipelas. Until four years before admission her general health was excellent. For the past year and a half her menstruation had been scanty.

Examination showed a rather pale, worn looking woman who had evidently lost weight. The mucous membranes were of fair color. The heart and lungs were normal. In the right lower quadrant about at McBurney's point was a somewhat elongated mass the size of a finger, moderately tender on pressure and freely movable. Satisfactory pelvic examination was not possible. Nothing abnormal was felt. By rectal examination the cervix was felt in good position. The uterus was movable. The vaults were apparently negative. Nothing abnormal was felt in the rectum itself. The extremities, pupils and knee-jerks were normal.

Before operation the urine showed a trace of sugar at one of three examinations and rare leucocytes in the sediment at another. Blood examination showed 10,800 leucocytes, 72 per cent. polynuclears, hemoglobin 55 per cent., reds 4,756,000, with marked achromia and great variation in size and shape. A Wassermann test was unsatisfactory. Stool examination was negative. The sputum was negative for tubercle bacilli.

X-ray examination showed a low but otherwise normal stomach. A good sphincter and cap were seen. There was no gastric stasis. There was a constant annular filling defect of the ascending colon at its junction with the cecum. The cecum was also irregular and the appendix contained bismuth seventy-two hours after the meal. It was large and dilated.

September 1 operation was done. She made a fair ether recovery, with moderate vomiting. She was very fretful and restless for the next few days and vomited considerably. She took fluids only fairly well. At the end of a week however she was making steady improvement and from this point made a good convalescence. September 26 she was discharged.

For nearly ten years she felt very well. Her digestion was good and her bowels moved regularly without catharties. About the middle of February, ten years after her operation, pain developed in the left upper quadrant and remained constant, radiating across to the right upper quadrant. It was like a severe gas pain shooting across the upper abdomen. She took large doses of mineral oil with some relief. Her bowels continued to move regularly twice a day with no diarrhea and no blood or tarry stools. She noticed increased pallor and thought she lost about twenty-three pounds in three months, partly she thought because of an attack of pleurisy during the last three weeks of May.

Upon examination she was well nourished. There was slight pallor of the skin and mucous membranes. There was a tender firm mass in the left upper quadrant descending on respiration. Rectal and vaginal examinations were negative.

Before operation the urine was normal. The blood is not recorded except leucocytes 19,000.

A barium enema passed without delay to a point just proximal to the splenic flexure. There appeared to be some narrowing of the colon at this point, and when the barium had reached it the patient complained of considerable pain. Only a small quantity of barium passed beyond this, and the remaining portions of the transverse colon could not be visualized. Plates of the right humerus showed considerable deformity of the upper half, and a line running across it suggestive of old fracture. The cortex of the bone was thickened and irregular. The trabeculae were coarse and abnormal in shape. The size of the bone was increased. The process extended into the epiphysis, but did not involve the joint.

Before operation the temperature was 98° to 99.3°, the pulse 87 to 100, the respiration normal.

June 11 operation was done. The patient showed little shock, and did well, though she complained a good deal of gas and weakness. By June 23 the deep stitches were all out and the wound fairly clean, though there was a little pus around one end and profuse fecal discharge next to the wound. Two days later the wound broke open a little, and there was a large abscess. The drainage of pus from the sinus in the midline incision and of feces from the incision in the flank become less until at the time she left the hospital there was almost none. She

regained strength rather slowly. July 19 she was discharged.

Discussion

BY EDWARD P. RICHARDSON, M.D.

The past history is not important.

In regard to this illness the history is a little indefinite, but I take it that she had an abdominal pain and tumor lasting for very nearly three years. The pain in the midelavicular region is very difficult to explain. It might be something entirely independent. The tendency to diarrhea is often very important from a surgical point of view. It may be a sign of partial obstruction of the bowel. Many cases that show very definite symptoms of colitis, diarrhea and bloody discharge are proved to be carcinoma with a narrowing stricture. Where we get a partially obstructing lesion, there is damming back of contents, irritation, more or less exudation of mucus, and lessened absorption, so that the feces remain liquid. They escape by the stricture from time to time and are passed out from the large intestine, and so there is an apparent diarrhea when actually obstruction exists.

Here there is a mass in the abdomen stated to be of long duration, associated with pain and possible symptoms of obstruction.

The sugar has no special importance.

It is not stated whether this is a catheter specimen of urine. If not the leucocytes are almost a normal finding in a woman.

The blood showed a reduction of hemoglobin although the reds were normal,—a secondary anemia.

Here we have on X-ray examination a filling defect corresponding with an elongated mass felt on abdominal examination, and the question was as to the nature of that mass. She apparently had an illness of three years' duration, not very progressive, and on that account I should be inclined to feel that the diagnosis was a hyperplastic tuberculosis of the ascending colon and cecum,—an unusual but not very rare clinical condition.

In the large bowel tuberculosis shows itself either as an ulcerative process, giving rise to symptoms of colitis, or as a hypertrophic process, giving rise to a tumor. We do not expect to confirm the diagnosis from finding tubercle bacilli in the stools. I think in this case an X-ray of the chest was desirable to show whether or not there was any active tuberculosis. Tuberculosis of the intestine is frequently associated with active tuberculosis of the lungs. But it was not done.

In regard to operation, when there is a local tuberculosis of the bowel producing obstructive symptoms it seems to me rational to operate. If there is no obstruction, or no definite local process which can be removed, it seems to me that general hygienic treatment is indicated. In the large intestine, if there is diffuse ulceration and hemorrhage, an ileostomy in order to sidetrack the feces may lead to less irritation. Operation was undertaken under the diagnosis of hypertrophic tuberculosis.

PRE-OPERATIVE DIAGNOSIS

Hypertrophic tuberculosis of the cecum.

OPERATION, FIRST ADMISSION

Ether. Six-inch muscle splitting right rectus hypogastric incision. The omentum and viscera were normal looking though pale. There was no evidence of gross inflammation, and no fluid. The liver, gall-bladder, stomach and pelvic organs were all palpated and were judged normal. The intestines were apparently normal except the cecum. This was freely movable, but showed around the whole circumference of its wall an inch above the dependent extremity of the cecum a hard mass two inches in length. The ileocecal valve and the appendix were not involved. The mass showed a hard, constricting band-like portion near its center. No glands were felt in the mesentery except one, soft but enlarged, at the apex of the resected mesentery. The cecum was mobilized by dividing the external reflection of the peritoneum along its length and along the ascending colon beyond the hepatic flexure and by careful sponge and scissors dissection of its whole bed to the internal peritoneal fold which included the mesentery and the blood supply. This was controlled by silk ligatures and cut free. The second portion of the duodenum and the lower pole of the kidney were laid bare in the dissection. Four inches of the terminal ileum were prepared for resection, clamped, crushed and divided with the actual cautery. The transverse colon in its beginning was divided in the same way, the ends tied with silk and infolded. Lateral anastomosis of the ileum and the transverse colon was done under most careful aseptic precautions, with many changes of linen and washings of hands between stages. The organs were replaced with apparently good blood supply. The patient was sent to the ward in fair condition; some shock.

Further Discussion

The question was whether the diagnosis was possible on exposure of this mass, and I think it probably was. Here was a localized constriction in the intestine. Hypertrophic tuberculosis in the few cases I have seen is more a diffuse thickening affecting principally the cecum, without definite limits, fading off into the bowel. It is sometimes associated with ulceration in the ileum, with tubercles visible over the surface of the ulcers. There was nothing of the

sort here, so I think it was apparent on operation that this was not tuberculosis.

PATHOLOGICAL REPORT

Cecum with a portion of the ascending colon six centimeters long. A nodular tumor mass section there is an annular ulcerated growth five centimeters in its greatest diameter, with prominent margins, one of which extends on to the valve. The center of this growth is smooth and much depressed. There are a few rather firm, slightly enlarged lymph nodes in the mesentery.

Right humerus. Shows considerable deformity of the upper half, and a line running across it suggestive of old fracture. The cortex of the bone is thickened and irregular. The trabeculae are coarse and abnormal in shape. The process extends into the epiphysis, but does not involve the joint.

can be felt through the cecal walls, and on the peritoneal surface there is a small dimpled scarlike area. The appendix is long and hangs free. The ileocecal valve admits the index finger. On

Microscopical examination of the tumor shows irregular gland structures in an abundant fibrous stroma which is infiltrated with round cells. In the sections examined the tumor in-

filtration does not extend below the submucosa. Examination of six of the enlarged lymph nodes in the mesentery shows a normal lymphadenoid tissue without evidence of metastasis.

Adenocarcinoma.

Further Discussion

Here is a carcinoma confined to the cecum, without metastasis, and also without deep invasion of the intestinal wall, a favorable case for survival.

After ten years of freedom she developed recurrence of abdominal pain, cramp-like in character, a progressive loss of weight, anemia, and a palpable tumor in the left upper quadrant, an obstructive lesion of the splenic flexure which did not allow the passage of barium beyond it.

She had previously received a fracture, and the question was whether that might have been a pathological fracture. Here is an X-ray of the humerus through which fracture took place, and the question was with regard to that process. I should not have ventured an expression of opinion. There is surely a pathological process in the upper end, and areas of absorption. It has not the appearance of a chronic osteomyelitis. The essential question was whether or not that could be a metastasis of the tumor. My feeling would have been that it was not a metastasis. The X-ray diagnosis is Paget's disease.

Dr. Cabot: Did she have any complaints in that part of the body?

Dr. Richardson: The history is not clear on that point. My recollection is that there was very little in the way of disability, and she fell down and broke her shoulder, that it united normally, and this was a more or less unexpected finding on X-ray examination. We did not believe that this X-ray finding was a contraindiction to exploration of the abdomen.

The next question was, Could we accomplish anything? Here was a patient who had an obstruction following operation for cancer. Were we justified? Was it a local recurrence or only a part of a generalized carcinoma? Her condition was good, her liver not enlarged. It seemed clear that she had an obstructive lesion which was going to prove fatal and should be operated on. So that in spite of the shoulder finding and previous history, she went through a second operation.

Pre-operative diagnosis

Carcinoma of the splenic flexure.

Operation, second admission

Gas and ether. An incision was made through the left rectus muscle, exposing a large hard malignant tumor of the transverse colon about four inches proximal to the splenic flexure. There were extensive glands in the mesentery and malignant implantation of the adjacent peritoneum in the flank. There was no metastasis to the liver. The growth was mobilized by dividing the outer peritoneal reflection and delivered through the wound. It proved to be an annular carcinomatous growth involving the omentum and mesentery. It was removed, with about four inches of normal bowel on each side. On account of adhesions to the old scar it was impossible to resect the whole of the transverse colon so as to join the ileum and the descending colon. Therefore the ends of the large intestine were closed and a lateral anastomosis was done. One cigarette wick through a stab wound in the flank.

Pathological report

A section of large intestine 18 centimeters long with the omentum attached. There is a large, deeply ulcerated growth 10 centimeters long which deeply invades the wall. There are wide margins of uninvolved tissue at both ends of it. The omentum is filled with numerous small, rather hard lymph nodes.

A microscopic examination of the growth shows a structure of large, irregular gland tubules lined by atypical columnar epithelial cells which deeply invade the muscular wall. Sections of three lymph nodes are negative.

Adenocarcinoma.

Further Discussion

The whole question in this case is, did this patient have a carcinoma and then have a metastasis developing at the end of ten years, or a new cancer developing in the colon? My feeling is very strong that this patient had a family history of carcinoma, and was susceptible. Although the first growth was completely removed and there was no generalized metastasis, she had a sensitiveness to the development of cancer which led to a new development of cancer in the remaining large bowel. I do not know that we can prove that. The type of growth is the same in both instances, but I believe this is a case of new development of cancer after entire removal of the primary growth.

She had rather a difficult convalescence on account of this type of anastomosis, but she was discharged in fair condition.

I should like to ask Dr. Mallory whether he considers that this is a new development of the cancer or only the expression of latent metastases?

Dr. Mallory: It would be very hard to say, of course. The second tumor is not at any site at which one would expect a metastasis from the original tumor. It is against it that way. The time element was fairly long. Of course where we have two tumors which histologically

are the same structure I do not know any way in which the matter can be proved. On the other hand, it is of fairly frequent occurrence that a person will have one potentially malignant tumor and later develop a second one of an entirely different character. I should be inclined to agree with you on it, but it is no more than a guess.

DR. RICHARDSON: One of the discouraging features in the operative treatment of carcinoma is the fact that there is no period of time after which we can be assured that the patient is cured. We put the time at three years, and at five years, and these cases come back, particularly after amputations of the breast, ten, fifteen, sometimes after as much as twenty years, with a local recurrence somewhere in the region of the scar. Of course one may say, if we get a period as long as that in a person of cancer age that we have practically produced a cure anyway, but it is one of the extremely discouraging features. These late recurrences do develop. But here I am inclined to believe that it is not a late recurrence, but a new development.

A SURGEON: What was your prognosis?

DR. RICHARDSON: My first was good as to relief. The second was bad, because the growth infiltrated the omentum and mesentery and showed implantation.

A PHYSICIAN: Why did you seriously consider tuberculosis?

DR. RICHARDSON: The length of time. She had the tumor for about three years before the first operation. Her symptoms were indefinite and not progressive.

A PHYSICIAN: The time was the principal element?

DR. RICHARDSON: Yes.

DR. CABOT: One of the things that interested me was that they found enlarged glands at the first operation, which might have discouraged the surgeon, might have made him think it was not worth while to take out the tumor. Then when examined histologically they were found to be enlarged but not malignant.

DR. RICHARDSON: I think that is often true. If there is an ulcerated lesion there is an opportunity for sepsis, and enlargement of the regional lymph nodes results.

DIAGNOSIS, FIRST ADMISSION

Adenocarcinoma of the ascending colon.

DIAGNOSIS, SECOND ADMISSION

Adenocarcinoma of the splenic flexure.

CASE 12443

DYSPHAGIA; QUESTION AS TO BEST TREATMENT

SURGICAL DEPARTMENT

An American cabinet maker seventy-six years old entered August 28 for relief of difficulty in swallowing.

Four weeks before admission he first noticed this difficulty. It was caused by liquids as much as by solids. It had constantly increased until he was unable to eat solid food at all, or if he partly swallowed it he soon vomited it. He had been able to sip fluids, but unable to swallow a mouthful. His voice was husky, but he said no more so than it had always been. He thought he had lost forty pounds during the past year. Ten days before admission X-rays were taken at a hospital and he was advised to come to this hospital for operation.

He had always been well until the present illness, though for many years he had had hacking cough and had urinated four to five times at night. For over forty years he had been ruptured. For many years he had had difficulty in hearing. He had had two or three attacks of grippe.

His wife had had two miscarriages, otherwise the family history was good.

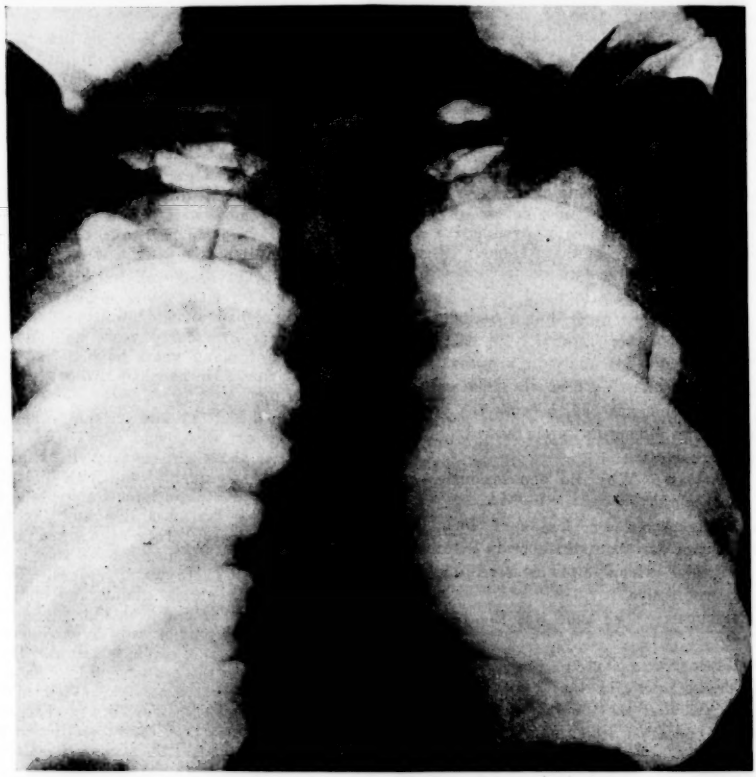
Examination showed an emaciated, pallid old man, swallowing frequently and with difficulty. The swallowing was often immediately followed by cough. The skin was dry and lax and showed many red nevi. There was a wen on the shoulder. The only remaining teeth were a few carious incisors. There was pyorrhea. There were a few small cervical glands and one palpable supraclavicular gland on the right. The spine was stiff. The lungs were hyperresonant. The breath sounds were emphysematous. There were a few râles at the bases behind. The apex impulse of the heart was seen and felt in the fifth space seven centimeters from midsternum in the midclavicular line, corresponding to the left border of dullness. There was no enlargement to percussion. A soft systolic murmur was heard at the apex and an early diastolic at the base, not loud or harsh, transmitted toward the apex. There was marked arteriosclerosis. There was a large easily reducible right scrotal hernia containing bowel, and a small high indirect left hernia. The prostate was moderately large, firm, slightly asymmetrical and irregular. All the joints showed some limitation, especially the spine and hips. The pupils and reflexes were normal.

Before operation the amount of urine was not recorded. The specific gravity was 1.010. Three examinations showed no albumin or sugar and a negative sediment. Blood examina-

tion showed 9,800 leucocytes, hemoglobin 50 per cent., reds 3,904,000.

X-ray showed an irregular filling defect involving the middle third of the esophagus with partial obstruction to the liquids and slight dilatation of the esophagus above the lesion.

was flat. Digitalis was begun. He was much weaker and was placed on the dangerous list. He continued in essentially the same condition, except for memory weakness, for the next two days. September 15 he was decidedly weaker and semistuporous. September 16 he died.



Shows an irregular filling defect involving the middle third of the esophagus with partial obstruction to the liquids and slight dilatation of the esophagus above the lesion.

September 1 operation was done. The patient remained in about the same condition. He was given tap water and two subpectorals daily. September 6 the wound looked red and septic. He grew a little weaker. September 10 the wound separated its entire length. All the fascia and subcutaneous tissue sloughed away. It was strapped together. Râles developed at both bases. September 12 the chromic catgut stitches holding the fascia came out. The chart

Discussion

BY EDWARD L. YOUNG, JR.

Difficulty in swallowing means a great deal more at seventy-six than if he were a child, because difficulty in swallowing at seventy-six is, statistically, malignant disease more often than it is anything else, while in a child we should consider the stenosis following trauma as the most probable cause.

Before the X-ray is seen what are the possibilities? First, of course, malignant disease. The esophagus is not a common site luckily for malignant disease in proportion to all the other malignancies that we see. But when it does come it is rapidly progressive, particularly so after the initial symptoms. This was progressive and very rapidly so, apparently, from the story.

Of course pressure from outside of a tumor in the mediastinum, an aneurysm, could cause difficulty in swallowing. The condition called cardiospasm, about the etiology of which very little is known, can make trouble for a much longer period of time. So that from the story the chances are vastly in favor of a malignant stenosis of the esophagus due to malignancy.

Will Dr. Holmes speak about the X-ray?—because I assume that will tell us exactly what it is.

DR. HOLMES: This is the anteroposterior view of the chest, and I presume it is taken after the patient had been allowed to drink a solution containing barium. We see the shadow which represents the barium in the esophagus, and just above an irregular streak of the barium with a moth-eaten upper edge. It lies in the midline, and there is nothing in the other tissues to suggest a lesion except a slight tortuosity of the aorta which is characteristic of arteriosclerosis.

In the lateral view we get it much better. It brings out the mediastinal spaces, the upper portion filled with barium, and above it this streaky area. This picture is very characteristic of carcinoma. In a man of this age we should hardly consider anything else. If it were a benign stricture the esophagus would show dilatation. If it were a simple spasm of the esophagus it probably would not last long enough to get a picture. Spasm can be ruled out by watching the patient for a period of time and by examinations made on different dates.

DR. CABOT: Is this esophagus dilated above the stricture?

DR. HOLMES: No, I think not. That is a normal stretching of the esophagus. We get quite a good deal of normal stretching. It looks quite large in the X-ray.

There is no evidence of masses around the esophagus. Sometimes we get infiltration.

A PHYSICIAN: Where does the stomach begin?

DR. HOLMES: About here. The dark area that we see is probably the fundus of the stomach. Cardiospasm is always in the extreme lower end of the esophagus, at the entrance of the esophagus into the stomach, and is always accompanied by dilatation of the esophagus. It never is the middle portion. There is no evidence whatever of cardiospasm.

DR. YOUNG: The question of diagnosis being settled, the question of treatment is the all-important one. As I have said, these cases are always rapid after the first onset of symptoms, many patients living only a few months and few, I think, living more than a year after the first symptoms. At first it seems as if this were an ideal thing for radium, because successful surgery in this type of case has not been possible up to date, although attempts at operation have been made. But the use of radium has not fulfilled its promise, not only failing to alleviate symptoms in a great many cases, but in doing actual harm. It is impossible to say how far a given case may have gone. The tissues around the esophagus may have been invaded already and the additional breaking down caused by intensive radiation may open up channels of infection or cause hemorrhages that prove very rapidly fatal.

The palliative treatment is gastrostomy, in an attempt to supply nutrition to the patient by putting food directly into the stomach. While on service here about a year ago we took over from the Eye and Ear Infirmary I think seven or eight cases to do a gastrostomy in order to give a chance for intensive radium treatment, to try to settle the question as to its benefit. I talked with Dr. Miller yesterday, and we both had the general idea that all but one or two patients died either while in the hospital or within a short time after leaving the hospital, and so far as we could tell no one of them was benefited. That group of cases was discussed at the surgical meeting a little later, and I think the feeling very definitely was that treatment should be decided in the individual case by the symptoms that a given patient may show, as to whether or not a gastrostomy should be done at all. For instance, swallowing of any food at all, even though sufficient nourishment can go to the stomach, may cause such spasm that the patient's life is almost unendurable because of pain, and that would be a definite indication, I certainly should not say that gastrostomy should not be done, but that it should not be done as a routine, because a great many patients are able to get sufficient nourishment through a very small opening, so that death is not due to lack of nourishment but to the toxemia of spreading disease.

I suppose this is one of the cases where gastrostomy was done. In these cases it is always done under local anesthesia, and it is easy to say that it is not much of an operation. But it must be remembered that any opening of the abdominal cavity in an emaciated patient or a patient suffering from a disease of this kind is of itself serious.

X-RAY INTERPRETATION

The appearance is that of malignancy.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Carcinoma of the esophagus.

PRE-OPERATIVE DIAGNOSIS

Carcinoma of the esophagus.

OPERATION

Local novocain. Upper left rectus muscle splitting incision. The abdominal cavity was opened without incident, the stomach drawn up into the wound, and at a suitable place in the midportion of the anterior wall of the stomach a number twenty-six catheter was buried in the stomach wall by infolding mucous membrane over it. A purse string suture was put in place at the end of the catheter. An incision was made into the stomach and the end of the catheter slipped through this incision into the cavity of the stomach, then the purse string suture tied above it. This line of suture was then buried by a second line of continuous sutures. The catheter was tested as to its patency and the tube was brought out through the upper portion of the wound. The peritoneum was extremely friable, and difficulty was experienced in closing it, as the stitches placed through the peritoneum only tore out with great readiness. The abdominal cavity was finally closed by a continuous over-and-over suture of double continuous catgut. The fascia was then closed by interrupted continuous catgut suture and the skin and subcutaneous tissues closed with silk. The tube was tied in place by a ligature of silk.

FURTHER DISCUSSION

The only suggestion I have is that it would have been a better time to test the catheter before putting it into the stomach.

Theoretically, if the gastrostomy was working properly they should have been able to put the fluid into that.

His tissues did not have any vitality. It is not at all uncommon to have it end this way. From my point of view I have nothing further to add.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of the esophagus.
Arteriosclerotic heart disease.
Bilateral inguinal hernia.
Adenoma of the prostate.
Bronchopneumonia.
Gastrostomy.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Carcinoma of the esophagus.

ANATOMIC DIAGNOSES

1. *Primary fatal lesion*

Carcinoma of the esophagus.

2. *Secondary or terminal lesions*

Arteriosclerosis of the aorta and the coronary arteries.
Arteriosclerotic nephritis (slight).
Syphilis of the aorta.
Syphilis of the liver.
Abscess of the right lung.
Subdiaphragmatic abscess.

3. *Historical landmarks*

Hypertrophy of the prostate.
Gastrostomy.

DR. TRACY B. MALLORY: The case is of course one of carcinoma of the esophagus, and the interest pathologically is rather in some of the side issues of the case.

On opening the peritoneal cavity the stomach was firmly adherent to the abdominal wall at the site of the operative wound, and incision into the stomach showed that the probe had passed into the stomach cavity. The adhesions to the abdominal wall were fibrous, but the stomach could fairly readily be separated from it. In freeing these adhesions a large pus pocket eight centimeters in diameter, lying between the lesser curvature and the dome of the diaphragm, was opened. This was filled with greenish foul purulent material, but no foreign bodies or other evidence of gastric contents could be found. It was firmly walled off with adhesions and did not communicate with the gastrostomy wound. The abscess cavity extended over a small portion of the left lobe of the liver and was bound on the left by the median border of the spleen. Dense fibrinous and fibrous adhesions covered both liver and spleen. In the midst of these lay patches of brownish purulent exudate. The general peritoneal cavity was free from fluid. The surfaces were smooth and glistening. The appendix was retrocecal, otherwise negative. The stomach was negative except for the gastrostomy opening and the exudate on its superior surface. The intestines were negative throughout. The mesenteric and retroperitoneal glands were not enlarged. The margin of the liver was at the costal border in the midclavicular line.

The right pleural cavity was entirely obliterated by old fibrous adhesions; the left largely so except for the base, where there were about 300 cubic centimeters of slightly turbid straw-colored fluid.

The esophagus at the level of the bifurcation of the trachea showed a circular ring of tumor growth about 4 centimeters long. The borders of this were elevated and very firm. The central portion was deeply ulcerated so as to make a somewhat aneurysmal dilatation. The surface was covered with very foul necrotic material and exudate. The tumor was firmly adherent to the trachea and to the aortic arch, but did

not penetrate either. None of the surrounding lymph nodes showed inflammation. The trachea and bronchi were not compressed by the tumor mass, but the mucosa was deeply congested and covered with mucopurulent exudate.

The right lung was firmly adherent to surrounding structures over its entire surface. In the effort to remove it it was torn through the apex, revealing a large abscess cavity in this area. No visible communication with the tumor of the esophagus could be demonstrated. Extending down from the abscess almost the entire upper lobe showed marked increase in firmness and was grey in color. A fresh cut through this portion showed most of the lobules distended, grey, and filled with minute white fibrinous plugs in the alveoli. The middle lobe was negative. The inferior lobe showed two patches of dark red hepatization. The left lung was negative except for a few patches of hepatization in the lower lobe.

The pericardium contained about 50 cubic centimeters of straw-colored fluid. The heart weighed 270 grams. The mitral valve measured 8½ centimeters, the aortic 7 centimeters. The aortic valve showed a ring of calcification about the base of each cusp, but was otherwise negative. The other valves were normal, except for slight thickening at the borders of the mitral. The cavities were free from thromboses, and the muscle walls were normal in appearance. The coronary arteries were completely calcified throughout their demonstrable length. The lumens were narrowed, but nowhere obliterated. The aorta showed very marked atheromatous plaques and calcification in its lower two-thirds. The ascending aorta and arch showed not only the atheromatous plaques, but numerous areas of depression and pit-like scarring. The base of these areas was very white in comparison with the atheroma of the remainder of the aorta. Sections through some of these areas showed a distinct absence of the media. The adventitia appeared to be slightly thickened. The pulmonary artery and venae cavae were negative.

The liver weighed 975 grams. The entire upper surface and much of the lower were covered with dense fibrous adhesions and occasional patches of greyish fibrinopurulent exudate. The surface was deeply pitted and scarred so as apparently to divide it into twenty or more lobes of varying size. The appearance was that of the classical hepar lobatum.

The spleen weighed 155 grams. Its surface was covered with fibrinopurulent exudate and it was adherent to all surrounding structures. It was extremely soft. On section a deep green border extended in for two millimeters from the capsule. The markings were indistinct and the tissue unusually friable.

The kidneys weighed 315 grams. The capsules stripped fairly readily leaving a faintly granular red surface. Several cysts from 3 to 10 millimeters in diameter were present in each kidney. The cortex was 3 millimeters thick. The markings were quite distinct.

The bladder showed a small congested area immediately about the trigonum.

The prostate showed slight general enlargement; otherwise negative.

A culture from the subdiaphragmatic abscess showed staphylococci, pneumococci and pyocyaneus. A culture from the lung showed pneumococci. The type was not determined.

This is the typical liver of syphilis.

The kidneys showed very slight vascular nephritis, but were otherwise negative.

The syphilis was fairly marked in the case, both in the aorta and in the liver, but did not extend down to the heart valves. The orifices of the coronaries were negative, and the remainder showed only arteriosclerotic processes, nothing suggesting syphilis of the coronaries.

DR. CABOT: Where did those abscesses come from?

DR. MALLORY: The abscess in the right apex I think unquestionably was a direct penetration of infection from the carcinoma. They were lying side by side. There was no communication between the two big enough to pass a probe through, but the surface of the carcinoma was ulcerated, very necrotic, and an infection must have extended through the wall and into the right apex. The perigastric abscesses must have been I think a sequel to the operation. It was one or two days before death, if I remember rightly, the tube slipped out, and the infection may have taken place at that time. I rather think it may have taken place earlier. It was a pretty big abscess, pretty well walled off. It may have been of several days' duration.

DR. YOUNG: I think the important thing in these abscesses is to remember that they are often not due to an error in technique so much as to the fact that, as Dr. Hugh Cabot has expressed it, the soil is prepared, that while a healthy person will overcome a certain amount of inevitable infection that probably goes with all abdominal surgery, a person with no resistance in the tissues will take the one or two bacteria that are there and change them into an abscess. I think that is always to be remembered in any surgery. Given two men equally clean, the man who is gentlest will have the least post-operative sepsis, because the other man "plows the soil". I think that this can probably be explained on that basis, that the man did not have any resistance, and there was an inevitable infection from the opening of a viscus.

Do you think the syphilis had anything to do with his death?

DR. MALLORY: No.

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THE CAUSE OF CANCER

IT is tempting to argue from analogy. We know of a vast variety of pathological conditions due to invasion of the body by various microörganisms. Many of these are clinically tumors and were, in fact, within the last seventy-five years usually included in the class of true tumors. It is not surprising that, when we have been able to split off tuberculomas, syphilomas and others of the granulomas as being due to specific microörganisms, that we should expect to be able to find still other tumors with a specific etiology.

It is well to remember, however, that Virchow had some inkling of the difference between neoplastic diseases and granulomas, and recognized a distinction between the proliferative inflammatory reaction and the true new growth in spite of their clinical similarity. Like the endless search for the philosopher's stone, the fountain of youth, the panacea, there has been a hopeful quest for one single parasitic agent whose discovery would clear up the whole group of neoplastic diseases. Recently, this hope was encouraged by the announcement by Gye and Barnard of the discovery of a cancer parasite. Unfortunately, their work has not been successfully repeated in other laboratories, and it is likely that their virus will join the already swollen ranks of discredited cancer parasites. To students of neoplastic diseases it is obvious that the varied conditions met with preclude the possibility of any universal cancer parasite, and render the parasitic origin of true tumors unlikely in the extreme.

It is perhaps significant that, whenever students of the cancer problem have an opportunity to meet together, the prevailing sentiment is always that we will find no one cause for the disease, and as a corollary no one cure.

The chronic irritation theory has lead to valuable work in the prevention of cancer, notably by Ewing and Bloodgood, yet even this theory is weakened by the vast numbers of chronic ulcers and other lesions that do not become malignant, and the many cases in which tumors arise without apparent antecedent irritation.

It was perhaps the genius of Ehrlich that led him to avoid the investigation of cancer as unprofitable and relatively hopeless, although he was greatly urged to attack the problem. In spite of years of labor by skilled investigators all over the world, we know very little as to the fundamental principles underlying neoplasia. However, it is undoubtedly a step forward to realize that the problem of the causation of new growths is, in all probability, not due to the action of invading microörganisms.

THIRTEEN UNNECESSARY DEATHS

THIRTEEN deaths from diphtheria occurring since last January have recently been investigated by one of the District Health Officers of the State Department of Public Health. The period of time which elapsed between the date of onset and the date of the doctor's first visit was as follows:

Same day as onset				2 cases
2 days after onset				1 case
4	"	"	"	4 cases
5	"	"	"	2 "
6	"	"	"	1 case
8	"	"	"	1 "
10	"	"	"	1 "
Not known				1 "

Cultures were taken on the day of the doctor's first visit in eleven instances. The dates of laboratory diagnosis were not established in two cases. Neither of these cultures was done by the State laboratory. All the cases had positive cultures, with one exception, namely, a case of laryngeal diphtheria which had several negatives.

Antitoxin was administered on the day of the doctor's first visit in ten cases, on the second day in one case, and on the third day in one case. The date of administration could not be determined in one case. Five cases received all their antitoxin with the initial dose; in six cases it was given in two doses on successive

days; one case was given three doses on successive days; and one case had four doses, the last dose twelve days after the initial injection.

Nine deaths, or 69 per cent., were in the age group 0-4 years; four deaths, or 31 per cent., were in the age group 5-9 years. But three of the thirteen cases attended school.

The social condition was considered poor in ten cases, fair in two, and in one, good.

According to the information outlined above, the responsibility for ten of these deaths lay very definitely with the parent or guardian, who failed to call a physician until at least four days had elapsed after the onset of the disease.

The story in regard to the balance of the thirteen cases is as follows: In one case the parent allowed the child to get out of bed against the doctor's advice, death following from myocarditis. In another case, although the physician was called on date of onset, an acute nephritis played a very definite role in the death of the child. In the case of laryngeal diphtheria the responsibility can be fairly placed on the physician. He was apparently misled on account of the fact that successive negative cultures were reported, and failed, therefore, to administer antitoxin early.

None of the thirteen cases had previously received toxin-antitoxin.

There are three lessons to be learned from this small group of deaths from diphtheria:

(1) Parents should call a physician immediately whenever a child has a sore throat.

(2) Physicians should give antitoxin without waiting for a culture report whenever the clinical findings arouse a suspicion that the case may be diphtheria.

(3) The initial dose of antitoxin should be large enough to protect the patient against the disease without the necessity of further antitoxin injections.

SMOKING AND SCHOLARSHIP

Further studies of the effect of tobacco on college men have been conducted at Antioch College by J. Rosslyn Earp. According to this research, those students who inhaled the fumes of tobacco had lower scholarship records than smoking students who did not inhale. This seems to fit the statement of a German scientist who recently reported that inhalers take eight times as much nicotine into their systems as smokers who do not inhale.

"As one ascends the scale of scholarship," says Mr. Earp, "the proportion of non-smokers grows steadily greater, and, in general, those who smoke much have lower scholarships than those who smoke little." Mr. Earp concludes from his findings that the figures indicate that the lowered mental efficiency is not just a coincidence but actually a consequence of smoking.

Post hoc ergo propter hoc reasoning is always dangerous, and without wishing particularly to take up the cudgels in behalf of our fellow smokers, we must nevertheless depose that Mr. Earp's conclusions are not necessarily correct. Before accepting these conclusions we would like to be convinced that low scholarship and heavy smoking are not the results of a common cause rather than one being the result of another; that a certain instability of character which prevents a boy from applying himself to his studies does not also lead him to use his time in the consumption of tobacco. Boys begin smoking, as a rule, because it is smart; an outward manifestation of a gay dog. Are not young men whose ambitions run along these lines those whom he would naturally suppose to show less inclination for their books? Many heavy smokers of the college age are lazy; it is our conviction, not that they are lazy because they smoke, but that they smoke because they are lazy. The devil finds mischief for idle hands, etc.

As we cast about in our list of acquaintances for examples to prove Mr. Earp's point—and many of them are able men of recognized ability and attainment—we find but few who do not smoke. Perhaps smoking among college men is fundamentally detrimental to intellectual activity, but we do not believe that statistics have necessarily proved it.

JOHNS HOPKINS CELEBRATES ITS 50TH YEAR

Distinguished Scholars and Scientists from all parts of the World convened recently at Johns Hopkins to celebrate the fiftieth anniversary of the founding of the University.

Among the alumni are fifty-four college and university presidents, one thousand four hundred and fifty-nine members of faculties of institutions of higher learning and hundreds of research scientists. Medicine has been an especial feature of the activities of these Universities.

Johns Hopkins left $3,500,000 for the founding of the University and hospital. The original bequest was augmented by interest until it was sufficient to erect the buildings in 1889. The medical school was opened in 1893.

Johns Hopkins was a bachelor. He built up his large fortune by seeking projects and people who were short of money but long on promise and ability. He showed his ability to select capable officials in his choice of the first board of trustees. The first president was Daniel Colt Gilman to whom much credit is due for the early development of the University.

The names of some of the greatest physicians and surgeons in this country are prominent among those who have made Johns Hopkins one of the leading educational institutions of the world.

THIS WEEK'S ISSUE

CONTAINS articles by the following authors:

CHUTE, ARTHUR L., M.D. Harvard Medical School 1895; F.A.C.S. Associate Professor of Genito-Urinary Diseases, Tufts Medical School; Genito-Urinary Surgeon to St. Elizabeth's Hospital, Boston; member Societé Internationale d'Urologie; American Association Genito-Urinary Surgeons; Clinical Society of Genito-Urinary Surgeons; The American Urological Association; The Boston Surgical Society; The New England Surgical Society; The Obstetrical Society and the Boston Orthopedic Society. His subject is "The Relation of the Small Obstructive Prostate to Certain Other Bladder Conditions." Page 889. Address: 352 Marlborough Street, Boston.

NOYES, IRA H., M.D. Yale University School of Medicine 1908; F.A.C.S. Member New England Surgical Society; Gynecologist to Providence City Hospital (R. I.) and Miriam Hospital, Providence, R. I.; Assistant Obstetrician, Providence Lying-in Hospital; Consulting Surgeon to South County Hospital, Wakefield, R. I., and Westerly Hospital, Westerly, R. I. His address is 210 Benefit Street, Providence, R. I. Associated with him is

CORVESE, ANTHONY, M.D. Tufts College Medical School 1912. Assistant Surgeon, Rhode Island Hospital; Assistant Gynecologist, Providence City Hospital; Gynecologist, House of Good Shepherd, Providence, R. I.; Consulting Surgeon, South County Hospital, Wakefield, R. I. His address is 485 Broadway, Providence, R. I. They write on "Significance of Blood Sedimentation Time in Gynecology and Obstetrics." Page 891.

GAMMONS, HERBERT F., Boston University School of Medicine 1909. Positions held: Assistant Physician, Massachusetts State Sanatorium, Rutland; Assistant Superintendent, Texas State Sanatorium; Superintendent Dallas City County Tuberculosis Sanatorium; Instructor in Clinical Medicine, Baylor University Medical School; Tuberculosis Specialist, Veterans' Bureau. His subject is "Treatment of Spontaneous Pneumothorax." Page 896. Address: Booneville, Ark.

HUBER, EDWARD G. Detailed Record on Page 291, No. 6, Vol. 195. Continued article on "The Control of Communicable Diseases Prevalent in Massachusetts." Page 897. Address: War Department, Washington, D. C.

MISCELLANY

CORRECTION

ON page 784 in our issue of October 21 under the report of the Committee on Membership and Finance, on Membership (Proceedings of the Council) Item 6, Dr. Arthur Hunter Perkins of Charlestown should have been reported as changing his membership from Middlesex South to Suffolk not Norfolk District. The JOURNAL regrets the clerical error.

SCIENCE IN GERMANY

VARIOUS advances in medicine are reported by *Science* as having been made public at the recent Düsseldorf meeting of the Association of German Natural Scientists and Physicians.

Professor O. Bruns, of the University of Königsberg has restored life to persons apparently dead of paralysis of the lungs and heart stoppage by the simultaneous administration of oxygen by artificial respiration and massage of the heart.

The active principle of the hemp plant has been extracted with petrol ether and standardized by Professor W. Wiechowski of the German University of Prague.

A synthetic drug resembling quinine has been produced in the laboratories of the Elberfelder Farbenfabriken. This new remedy, "Plasmodrin," is much more potent than quinine and kills impartially all plasmodia in the blood stream.

Dr. Hugo Hellendahl of Düsseldorf, reported eighteen authentic cases of postmortem births—living infants born from one half to twenty-four hours after the deaths of their mothers.

A special hormone, "menformore," responsible for the specific physiology of female animals, was described by Professor Edward Laqueur, of the University of Amsterdam. This substance is so powerful that one tenth of a milligram will cause typical mating reaction in spayed female laboratory animals.

CORRESPONDENCE

DISCUSSION OF THE WORKMEN'S COMPENSATION ACT

Editor, Boston Medical and Surgical Journal:

Will you please publish in an early issue of the JOURNAL the very frank comments I make on your editorial of September 30 relative to the Workmen's Compensation law. You state that hospitals have not been paid a sufficient amount to reimburse them for care of industrial cases. Do you know that a Medical Advisory Committee, according to statements by attorneys for insurance companies and by members of the Industrial Accident Board, as having the approval of the Massachusetts Medical Society, fixed $21 a week "as not excessive" over six years ago, and have never made any effort to change it, with changing times.

Do you also know that the same Advisory Committee made a recommendation relative to non-payment, by insurance companies, of compensation to doctors connected with the staff of hospitals in this State who had the care of injured workmen, and that the Industrial Accident Board put that recommendation in force with vengeance. And this same committee made *that* recommendation *six years* ago, and in spite of protests have never even made an attempt

to revise it. One member of the Advisory Committee says the Massachusetts Medical Society is not responsible for the committee. But he objects to having Massachusetts Medical Society *so record it*.

Another says, "It's bad, but it cannot be changed." "Who can cut the Gordian knot?" I say a committee that evidently has not functioned for six years cannot cut it by sitting calmly by and ignoring it.

In your editorial you say if doctors in hospitals were paid, there would be an attractive position at the Haymarket Square Relief Station. What a shame! The very idea that there should ever be an attractive position for a doctor is sufficient to damn the very suggestion.

You say it would be lucrative! That is unexpected in medicine—but should one man hold the position forever and never rotate with the great number of able doctors in Boston, so that all might have the opportunity, once in their lives, of occupying an attractive and lucrative position?

Your editorial says hospitals should be paid more but you are very short on ideas as to how it may be brought about. You state: "It has therefore been the policy of the Industrial Accident Board to support as far as possible the policies adopted by the Trustees of the various hospitals in reference to payment of staff members for the care of ward patients." I challenge every word of that statement. Whatever may be its policy, it is the decisions of the Board that count and there "ain't no such animal" as trustees or rules of hospitals considered in them. "On recommendation of the Medical Advisory Committee, the Industrial Accident Board finds that Dr. X is not entitled, etc."—that is the formula, and there is no mention of trustees or hospital rules, and I have decisions of the Board to prove your entire statement erroneous.

I have heard the same arguments you make in the JOURNAL used by attorneys for insurance companies before the Industrial Board time and time again. Several prominent members of the profession have the same argument and I wonder where they get it. It all sounds so much alike to me. And now the climax, the poor, benevolent insurance companies, if the injured working man is to receive more than the maximum paltry $16 per week, if the hospitals are paid actual cost of caring for the laborer in his distress, if the long suffering doctor should by any chance get even decent pay for his services, why these poor companies would have to raise the rates to employers, because they have only collected in one year in Massachusetts over $20,000,000 and out of that paid the injured working man about $8,000,000. Just a little overhead and profit of $12,000,000. And in 1925 in Pennsylvania under similar regulations, the insurance companies collected $85,000,000 and paid out $35,000,000. Just a little overhead for profit of $50,000,000!

You are very careful to enumerate "that in 1925 medical costs were nearly two and one-half million" (that is, medical, nursing, hospital, etc.), "injured workmen and women, four million; fatally injured, one million, a total of about eight million." But you neglected to say how much the insurance companies collected in 1925 from employers out of which they paid this $8,000,000. *That's the important fact.* Please state it in a future publication for the enlightenment of your readers.

Now to summarize: Of every five dollars paid insurance companies by employers, these poor companies must pay the injured man one dollar; for combined services of doctors, hospitals, and nurses, fifty cents; to the widows and dependent children, twenty-five cents, and sad to relate there is but three dollars and twenty-five cents left for its own use. You say if a few hospital doctors should be paid, the greater number outside of hospitals would be paid less? And it does not seem your purpose to plead for pay for staff doctors, more pay for hospitals and for doctors outside of hospitals, and above all, more compensation for the injured man.

And the legislative committee of the Massachusetts Medical Society recommends no action on the Workmen's Compensation law!

And there is an attractive position *if paid* at the Haymarket Square Relief Station!

Very truly,

J. G. HANSON, M.D.

Northampton, Mass.

CONNECTICUT CLINICAL CONGRESS

October 16, 1926.

Editor, Boston Medical and Surgical Journal:

I have read with pleasure the article on the Clinical Congress of the Connecticut State Medical Society by George Dallas Henderson, M.D.

I too had the pleasure of attending the Second Annual Clinical Congress held by the Connecticut State Medical Society in New Haven and enjoyed it thoroughly. The courtesy and good fellowship were delightful and the valuable papers read made it very much worth while. I too agree with Dr. Henderson, that the whole arrangement was ideal and one that our own State Society might well copy.

Very truly yours,

GEORGE HIPKISS.

THE ARMY MEDICAL FIELD SCHOOL AT CARLISLE—AN APPRECIATION

On September 12 of this year about one hundred and twenty-five medical officers of the Organized Reserves met at Carlisle Barracks, Carlisle, Pennsylvania, for a two-weeks camp course of instruction. These men came from all over the country excepting Texas and the west coast and comprised officers who for the most part had had long overseas service durnig the World War. Their average age was about 52. These facts are mentioned so that one may get some idea of the type of men who willingly detached themselves from their routine of life and professional tasks to live again the relatively uncomfortable life of the soldier in camp. And yet I am not concerned so much to speak of them (although their spirit throughout was admirable in the highest degree) as I am of the splendid group of Army medical officers who gave the course of instruction and who made every man present feel the earnestness and importance of their mission. Courtesy and coöperation were the watchwords of the Regular Army officers. The lectures were well planned and systematically and progressively given; no pains or endeavor were spared to make the course practical. Several of the speakers came from great distances to give just one lecture so that subjects might be properly coördinated. The field exercises were likewise painstakingly arranged, and whether it were merely the demonstration of new types of ambulances, medical chests and field devices for water purification, or the more complicated staging of infantry conflict utilizing various types of airplanes, a result was secured that showed an admirable and careful planning.

The Regular Army officers from Lieutenant Colonel Reynolds down were unfailing in their consideration for the comfort and pleasure of the visitors. The quarters under tents were most comfortable, the mess good, and the conveniences excellent. It is not an easy thing to dislocate successful professional men of middle age (no emergency existing) and put them back into the camp life of the soldier with its relative discomforts,—and have them like it; and yet such was the case. During our two-weeks session I heard not one single note of dissatisfaction; on the contrary all came away feeling that an earnest, intelligent, courteous group of Regular Army medical officers had left nothing undone to make the course

worth-while and our stay pleasant. It was one more convincing proof of the fine spirit of real coöperation and understanding existing today between the Regular Army and the Organized Reserves.

DAVID D. SCANNELL, M.D..

475 Commonwealth Avenue, Boston, Mass.

CASES REPORTED TO THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH FOR THE WEEK ENDING OCTOBER 16, 1926

Anterior poliomyelitis	3	Ophthalmia neonatorum	41
Chickenpox	103	Pneumonia lobar	48
Diphtheria	58	Scarlet fever	130
Dog-bite requiring anti-rabic treatment	3	Septic sore throat	1
Encephalitis lethargica	2	Suppurative conjunctivitis	3
German measles	10	Syphilis	21
Gonorrhea	71	Tuberculosis, pulmonary	74
Influenza	5	Tuberculosis, other forms	13
Measles	22	Tuberculosis, hilum	2
Mumps	61	Typhoid fever	19
		Whooping cough	69

FOR THE WEEK ENDING OCTOBER 23, 1926

Anterior poliomyelitis	9	Ophthalmia neonatorum	34
Chickenpox	84	Pneumonia, lobar	44
Diphtheria	69	Scarlet fever	176
Dog-bite requiring anti-rabic treatment	6	Septic sore throat	2
Dysentery	1	Suppurative conjunctivitis	1
Encephalitis lethargica	3	Syphilis	44
German measles	6	Trachoma	1
Gonorrhea	101	Tuberculosis, pulmonary	90
Influenza	4	Tuberculosis, other forms	16
Malaria	1	Tuberculosis, hilum	11
Measles	39	Typhoid fever	16
Mumps	62	Whooping cough	70

CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING OCTOBER 16, 1926

Diphtheria	33	Chickenpox	27
Last week	17	German measles	2
Diphtheria bacilli carriers	7	Influenza	2
Scarlet fever	23	Malaria	1
Last week	28	Mumps	5
Measles	10	Pneumonia, lobar	22
Last week	20	Poliomyelitis	2
Whooping cough	22	Septic sore throat	15
Last week	22	Trachoma	1
Typhoid fever	4	Tuberculosis, pulmonary	22
Last week	4	Gonorrhea	39
Bronchopneumonia	14	Syphilis	25

NEWS ITEMS

HARVARD MEDICAL SCHOOL NEWS—*Dr. David L. Edsall*, Dean of Harvard Medical School, has gone to the Peking Union Medical College, in China, at which place he is to be Visiting Professor of Medicine. Dr. Edsall was granted a six months' leave of absence from the Medical School, which has enabled him to accept the above invitation. In Dr. Edsall's absence, Dr. Walter B. Cannon, the George Higginson Professor of Physiology of Harvard Medical, is the Acting Dean of the Medical School.

Dr. Cecil K. Drinker, Professor of Anatomy and Assistant Dean of the School of Public Health and Hygiene of Harvard Medical School, has been granted a year's leave of absence from September 1, 1926. Dr. Drinker has departed for the University of Copenhagen, Denmark, at which place he is to work with Dr. Krogh, who has done phenomenal work during the past years on capillary circulation, and the capillaries. In Dr. Drinker's absence, Dr. William L. Moss, Assistant Professor of Bacteriology and Immunology, is Acting Dean.

Dr. E. A. Boyden, Assistant Professor of Comparative Anatomy, has resigned his position to accept the position of Associate Professor of Anatomy in charge of the Department of Anatomy of the University of Illinois. Dr. Boyden's place is to be filled temporarily by Dr. Torr W. Harmer, Assitant in Anatomy and in Surgery for the past several years in the Department of Anatomy.

Dr. Edward W. Taylor has resigned his position as the James Jackson Putnam Professor of Neurology. Dr 'ames B. Ayer, for some time Assistant Professor of Neurology, will take up Dr. Taylor's work and is to have charge of the teaching of neurology at the Massachusetts General Hospital. His title is "Clinical Professor of Neurology."

Dr. C. Morton Smith has recently resigned as Clinical Professor of Syphilology of the Harvard Medical School, and his place is to be filled by Dr. Henry D. Lloyd, for some time Instructor in Syphilology. Dr. Lloyd's title is "Assistant Professor of Syphilology."

Dr. Paul Thorndike, Clinical Professor of Genito-Urinary Surgery, has recently resigned from the Department of Surgery.

Dr. Harlan F. Newton, holder of the Austin Teaching Fellowship in Surgery for the past year in Harvard Medical School, has been recently awarded the Dr. William Hunter Workman Scholarship for the academic year, 1926-1927. This scholarship was established in 1925 by a gift from Dr. William Hunter Workman to enable one or more graduates of the Harvard Medical School to pursue postgraduate studies in medicine in this country or abroad.

Word has just been received that *Dr. Edward D. Churchill*, Instructor in Surgery, and *Dr. Frank Fremont-Smith*, Assistant in Neuropathology, of Harvard Medical College, have been awarded the William O. Moseley, Jr., Travelling Fellowships for the academic year 1926-1927. These fellowships were established in 1912 by a bequest of Mrs. William O. Moseley for students who have attended the school for three or four years, to enable them to continue the study of medicine in Europe. Usually two fellowships are awarded each academic year from the income.

Dr. Charles L. Connor, Instructor in Pathology, has been given a leave of absence in order that he may accept a temporary position as Associate Professor of Pathology at McGill University.

Dr. Alice Hamilton, Assistant Professor of Industrial Medicine in the Public Health School of Harvard Medical College, will be on sabbatical leave for the academic year 1926-1927. Her course in Industrial Toxicology will be given by Professor Edgar L. Collis, from the University of Wales, Cardiff, England, at which place he is Lecturer on Industrial Hygiene.

At a meeting of the faculty of medicine held in the faculty room on Friday, October 1, the following appointments were recommended, and have since been authorized:

Reappointments with Change of Title (one year from September 1, 1926): Torr Wagner Harmer, M.D., Instructor in Anatomy, from Assistant in Anatomy; David Brunswick, Ph.D., Research Fellow in Physiology, from Instructor in Physiology.

Reappointments (one year from September 1, 1926): Percival Bailey, M.D., Instructor in Surgery; William Bradley Breed, M.D., Assistant in Medicine; Roger Colgate Graves, M.D., Assistant in Genito-Urinary Surgery; Donald Macomber, M.D., Research Fellow in Obstetrics.

New Appointments (one year from September 1, 1926): George Calvin Prather, M.D., Assistant in Anatomy; William Martindale Shedden, M.D., Assist-

ant in Anatomy; Ralph Milton Crumrine, M.D., Assistant in Pathology; John Howard Ferguson, B.A., Student Assistant in Pathology; James Stewart Rooney, M.D., Assistant in Pathology; Gordon Douglas Atkinson, M.D., Assistant in Genito-Urinary Surgery; Edwin Parker Hayden, M.D., Assistant in Surgery; Bernard Graham Scholefield, B.Ch., Assistant in Genito-Urinary Surgery; Amzi Bedell Shoemaker, M.D., Assistant in Genito-Urinary Surgery; Arthur John McLean, M.D., Arthur Tracy Cabot Fellow in Charge of Laboratory of Surgical Research; Nestor Decamps, M.D., Research Fellow in Medicine; Francis Farnham Heyroth, M.D., Research Fellow in Physical Chemistry; Antonio Barbeau, M.D., Research Fellow in Physiology; Wenceslao Pascual, M.D., Research Fellow in Physiology; Herbert Sessions Wells, M.D., Research Fellow in Physiology; Raymund Lull Zwemer, Ph.D., Research Fellow in Physiology.

Dr. Sydney William Britton, a Fellow of the National Research Council while here, left the department in September to take a position in the Department of Physiology at Johns Hopkins Medical School Baltimore.

The following persons are new members of the department:

Paul M. Harmon, Ph.D. (1920) from Indiana University. Is on a year's leave of absence and holds an instructorship here.

C. M. MacFall, Ph.D. (1926) from the University of Virginia. Holds a teaching fellowship here.

Gordon C. Ring, Massachusetts Agricultural College, Amherst, A.B. Holds a teaching fellowship here.

Antonio Barbeau, M.D. from Montreal University. A Fellow of the Rockefeller Foundation. Holds a research fellowship here.

Herbert S. Wells, M.D. (1925) from Johns Hopkins. Studied at the University of California last year. Holds a research fellowship here and is a Fellow of the National Research Council in the medical sciences.

Raymund L. Zwemer, Ph.D. (1926) from Yale University. Holds a research fellowship here and is a Fellow of the National Research Council in the biological sciences.

TO RAISE $25,000 FOR NURSERY TRAINING—At a tea given October 14, Mrs. Frank W. Hallowell announced the launching of a campaign to raise $25,000 for the Nursery Training School of Boston, formerly the Ruggles Street Nursery School and Training Center. Miss Abigail A. Eliot, head of the school, and Mrs. Henry Greenleaf Pearson, chairman of the board of directors, addressed the gathering.

A committee has been selected to solicit contributions.

THE ANTIVIVISECTION AND ANIMAL PROTECTION CONGRESS—This congress was held in Philadelphia, October 17 to 20, 1926. This is the second congress of this kind to meet in the United States. Among the speakers were John S. Codman, the Duchess of Hamilton, of the Animal Defence and Antivivisection Society of London, and Colonel James Francis Donegan, retired British army medical officer. The Duchess of Hamilton was scheduled to speak in Boston on October 26 and Colonel Donegan in November.

PSYCHIATRIC SOCIETY HOLDS ANNUAL MEETING—The third annual meeting of the Massachusetts Psychiatric Society at the Hotel Somerset, October 21, was attended by a large group of representative psychiatrists from various parts of the State. Professor Francis B. Sayre, of the Harvard Law School, spoke on the international relationships and possibilities of Siam.

The following officers were elected: Dr. Abraham Myerson, president; Dr. James V. May, vice-president; and Dr. Winfred Overholser, secretary and treasurer. —*Boston Herald.*

THURBER MEDICAL ASSOCIATION NAMES HEADS—John V. Gallagher of Milford, a member of the Massachusetts Medical Society, was elected president of the Thurber Medical Association, the oldest independent medical society in the United States, at its 73rd annual meeting October 21 at the Nurses' Home in Milford.

Other officials named were the following: Vice-president, Dr. K. E. Campbell of Oakdale; secretary, Dr. John M. French of Milford; treasurer, Dr. William L. Johnson of Uxbridge; librarian, Dr. Francis H. Rally of Milford; finance committee, Dr. John Paul Cooper of Wrentham, Dr. Frank E. White of Milford, and Dr. Philip E. Levy of Milford.—*Boston Herald.*

NOTICE

DR. J. C. HUBBARD and Dr. R. C. Cochrane announce their association in the practice of surgery. 86 Bay State Rd., Boston, Mass.

REPORTS AND NOTICES OF MEETINGS

MASSACHUSETTS PSYCHIATRIC SOCIETY

THE third annual meeting of the Massachusetts Psychiatric Society was held at the Hotel Somerset, October 21, 1926.

A dinner preceded the business meeting. At that meeting, in addition to the election of new members, the following officers were elected:

President, Abraham Myerson, M.D.; Vice-President, James V. May, M.D.; Councillors, George M. Kline, M.D., A. H. Pierce, M.D.; Secretary and Treasurer, Winfred Overholser, M.D.

The speaker of the evening was Professor Francis B. Sayre of the Harvard Law School, who gave a most instructive and interesting account of his experiences while official advisor to the King of Siam. Some of his work included the negotiations of treaties of various European powers and the side-lights given by Professor Sayre upon diplomatic matters were most interesting. About fifty members and guests were present.

WINFRED OVERHOLSER,
Secretary and Treasurer,
Massachusetts Psychiatric Society.

LECTURES ON "THE CARE OF THE PATIENT"

THE last of the series of lectures by Dr. Austin Fox Riggs on "The Care of the Patient," sponsored by Harvard Medical School, were given on the afternoons of Tuesday, October 26 and Thursday, October 28. Dr. Austin Fox Riggs spoke on Tuesday afternoon and Dr. Alfred Worcester on Thursday.

MEETING OF THE ASSOCIATED BOARDS OF HEALTH OF THE SOUTH EASTERN HEALTH DISTRICT

At Brewster, Mass., on Wednesday, October 20, the Associated Boards of Health of the South Eastern Health District held its autumn meeting, the subject for discussion being the minimum quarantine requirements suggested by the State Department of Public Health. Interest in the subject was indicated by the presence of about fifty health officers representing some twenty towns and cities.

The meeting was of the round table order, with no set speakers, the subject being introduced by Dr. R. T. McKnight, district health officer for the state department. Mr. W. G. Kirschbaum, health officer of New Bedford, one of the advisory committee assisting in formulating the requirements, presented much explanatory matter. The attitude of the meeting was that of frank and full discussion, from the point of view of the town or small city. The vote of the meeting was not to present a formal opinion by the association, but to have the secretary transmit to the state department the opinions voiced for or against the various requirements.

On many items there was unanimity of opinion, there was a good deal of discussion about the necessity for placarding the diseases that are common, such as diphtheria. Aside from the expense involved, it was said, that at the present time there is a wholesome regard for the comparatively uncommon card on the house, but if in an outbreak many houses were placarded, the general public would become indifferent and the real value of a card would be lost. There was in some other matters a discussion of the "requirements" mostly in details, such as the quarantining of school teachers, persons not food handlers and contacts not living at home.

THE JOINT MEETING OF THE ESSEX NORTH, ESSEX SOUTH, MIDDLESEX NORTH AND MIDDLESEX EAST DISTRICT MEDICAL SOCIETIES

A joint meeting of Essex North and South and Middlesex North and East District Societies was held at the Essex Sanatorium, Middleton, on Wednesday, October 20, 1926.

A clinical program was presented by the Staff of the Sanatorium from two to three o'clock. The meeting was called to order by Dr. Ralph R. Stratton of Middlesex East, the senior President. Dr. James S. Stone, President of the parent Society spoke, urging support of efforts to extend the protection afforded by vaccination against smallpox, and also advocated widening the powers of the Board of Registration in Medicine, by vesting in the board authority to approve or disapprove medical schools whose graduates come up for licensure. He referred to a plan to form a New England Medical Council which might consist of two or more delegates from each state Society throughout New England. This council might be useful, he thought, in dealing with such questions as the relations of the public to the profession in health matters. Dr. Stone called attention to the agitation for a modification of the curriculum in the medical schools of the better grade and urged the thoughtful consideration of this matter upon all members. He spoke also of the statute known as the "Workmen's Compensation Act" and directed attention to the existance of the Special Commission, now sitting, and the opportunity thus offered for expression of one's views and the presentation of suggestions looking to improvement in the statute.

Dr. George H. Bigelow, Commissioner of Public Health of the Commonwealth, addressed the meeting, taking for his subject "What Should the Department of Public Health Do Under the Present Cancer Legislation?"

He spoke of the high incidence of cancer in Massachusetts and outlined the efforts which the Department is making to comply with the mandate of the Legislature.

Dr. Paul D. White of Boston gave a comprehensive talk on "Angina Pectoris." Supper concluded the program. Attendance 119.

Wm. T. Hopkins, *Reporter*.

COMBINED PEDIATRIC MEETING

The New England Pediatric Society, the Pediatric Section of the New York Academy of Medicine and the Philadelphia Pediatric Society held their combined meeting in Boston on Saturday, October 16, under the auspices of the New England Society. Last year the meeting took place in Philadelphia and next year will be held in New York. About 125 members were present.

The morning session convened at the Children's Hospital at 10 o'clock, where papers were read on Infant Feeding by Drs. Kenneth D. Blackfan and Joseph Johnston, The Acid Metabolism of Intoxicated Infants by Dr. Bengt Hamilton, Variations in the Diastase of the Blood of Infants by Dr. George Guest, and Reflex Activity After Transection of the Spinal Cord by Dr. Bronson Crothers. Following these papers Dr. Elliott P. Joslin talked on Diabetes in Childhood at the Deaconess Hospital. Lunch was served at the Harvard School of Public Health.

Following the luncheon the meeting reassembled in the amphitheatre of the Peter Bent Brigham Hospital where Dr. Harvey Cushing held a clinic on Neurological Surgery in Childhood, with special reference to tumors of the

brain. A number of post-operative cases were shown. After the meeting an excursion was made to the New England Peabody Home for Crippled Children, under the direction of Dr. Gerald Hoeffel.

In the evening a dinner attended by about 75 was held at the new University Club, at which Professor William T Bovie talked on The Physics of Heliotherapy; Its Possibilities and Its Obstacles.

PHYSIOLOGICAL CONFERENCE MEETS

Dr. Raymund L. Zwemer, National Research Fellow in the Biological Sciences, of the Physiology Department of Harvard Medical School, was the speaker at the last meeting of the Physiological Conference of the Medical school, held on Oct. 20. Dr. Zwemer's subject was "An Experimental Study of the Adrenal Cortex," which was his thesis subject at Yale University the past year. His research work was carried out at the Osborn Zoological Laboratory, of Yale University, and at the Biological Laboratory, Cold Spring Harbor, Long Island, N. Y., while a Fellow.

Dr. Zwemer opened his discussion by an historical introduction on the experimental work done in the past on the adrenal glands. He pointed out that although three quarters of a century has elapsed since the first work on the adrenal glands was done, that we are still without a clear understanding of the role of the suprarenal glands in Addison's Disease, or as to their function in the normal organism.

In Dr. Zwemer's work, cats were used, because of the infrequency of these animals possessing accessory glands of cortical material. The lumbar pathway was used for epinephrectomy in all the experiments, the adrenals being removed in two stages, one or two weeks apart. The technique of Houssay and Lewis in curetting the medulla was used in his work on the medulla of the gland. He stated that the chief measure of the efficacy of adrenal removal in cats, is the duration of life after the removal of the second gland, since even a small amount of cortex if left, is sufficient to maintain life, and that for this reason an unusually large series of control animals and operations were employed.

Dr. Zwemer first ran a number of experiments on the "Effect of Total Removal of the Adrenals from Normal Cats," in order to determine the average duration of life after a total epinephrectomy, and this data was used as the chief criterion in determining the survival value of the cortical portion of the adrenal complex in maintenance of life following the removal of the medulla.

The following conclusions were made by Dr. Zwemer as a result of these experiments:

1. Unilateral extirpation of the adrenal of cats has no ill effect on the animal.
2. Cats deprived of both adrenals, in two stages with an interval of from two to twenty days between operations, will survive on an average of fifty-three hours. The extremes being twenty-six and one hundred and eleven hours.
3. Animals retaining only the cortex of one adrenal with undisturbed blood supply, survive indefinitely, showing that the medullary portion of the adrenal complex is not essential for life.
4. The removal of this surgically produced cortical gland causes the death of the animal in from one to eight days. Histological examination showed that the glands were composed only of cortical tissue. Therefore we conclude that the cortex is the portion of the adrenal complex essential for life in cats.
5. An accessory gland composed of pure cortical material was found to have sustained the life of one epinephrectomized animal.
6. Transplants of the adrenal cortex prolonged life in epinephrectomized cats for an average of six and one-half days, but degeneration of the graft eventually caused death.

Dr. Zwemer also in his researches conducted a number of experiments on the "Effect of the Thyroid on Animals Deprived of Their Adrenals," and on the "Relief of Adrenal Insufficiency Symptoms by the Oral Administration of Glucose Solution," with the aim in view of the prolongation of life after complete epinephrectomy. In these studies of the effect of thyroidectomy and thyroid feeding on epinephrectomized animals, the duration of life, after complete removal of the adrenals, was taken as a criterion. As a result of these experiments Dr. Zwemer made the following conclusions:

1. Feeding of thyroid substance to unoperated normal cats, causes a decrease in the weight of the animal. This is believed to be due to the dehydrating effect of the thyroid, and to the increased metabolism.
2. *The removal* of the thyroid glands prolongs the life of animals deprived of their adrenals to an average of two hundred hours. The absence of the thyroid apparently tends to decrease the elimination of water, and the systems of adrenal insufficiency, which strikingly resemble those of anhydremia, are postponed.
3. An excess of thyroid substance, produced by daily feeding of the dessicated gland, during the interval between the removal of the first and second adrenals hastens the death of epinephrectomized animals. The thyroid appears to increase the elimination of water from the organism, thus adding to the dehydration effect following adrenal extirpation. The animals survive on an average only eighteen hours after the removal of the second adrenal.
4. The oral administration of a 5% solution of glucose, if given in sufficient quantities, will

prolong the life of epinephrectomized cats for an average of two hundred and twenty hours.

THE ANNUAL MEETING OF THE HAMPDEN, HAMPSHIRE, BERKSHIRE AND FRANKLIN DISTRICT MEDICAL SOCIETIES

THE annual meeting of the four district medical societies in the western part of the state, at the Hotel Kimball, in Springfield, on October 12, Columbus Day, though well attended, was insufficiently so. Maybe a glorious Autumnal holiday was a counter attraction; if so, alas! for Autumn days are frequent, and such a presentation of gall-bladder physiology, clarified by striking projections, and given in the distinct diction of Dr. Lester Whitaker, is very infrequent.

Picturing gall-bladders injected with an iodized preparation, opaque to X-ray, the speaker showed the extent and rapidity of gall-bladder emptying after varying experiments,—which established the futility of so-called non-surgical drainage of the gall-bladder, as well as its needlessness; for all that this vaunted performance pretends to do, but fails to do, is done completely by the ingestion of a fat-containing meal. The fatty food acts chemically, after absorption; for if the pylorus were closed the result on the gall-bladder was negative; but closely following the passing of food into the duodenum, gall-bladder activity commenced. The intravenous injection of fatty preparations gave equally positive results, but it had to be a fatty preparation, injections of emulsified mineral oils all gave negative results. That the gall-bladder activity was not due to any direct or indirect stimulation of the vagus was proven by the occurrence of identical results even after section of all the nerve fibres leading to the gall-bladder. Small meals, frequently taken, start gall-bladder activity but without emptying, and then the bile returned to the bladder; so for thorough emptying the meals should be spaced, not over three, and better two, in a day, and these meals should be rich in fat. If the bladder be not emptied for three or four days the formation of stones commences from stasis. The danger of continued eating of little food and free from fat, as is the custom in reducing diets, is evident. The speaker doubted the influence of infections, as typhoid, in the causation of stones; small and repeated meals, chiefly milk, with a resulting bile stasis, is the more probable explanation. A large fatty meal will cause a gall-bladder not only to empty its bile, but, if the walls be healthy, even small stones; herein being the probable explanation of the old reputed benefits of olive oil. Unfortunately a diseased gall-bladder soon loses the tone of its smooth muscles, so here, as elsewhere, the hope of health is the prevention of disease.

Previous to Dr. Whitaker's address Dr. James S. Stone, President of the Massachusetts Medical Society, called attention to the problems relating to legislation which will come up for action the coming winter and Dr. John M. Birnie explained the work of the Board of Registration in Medicine in conducting the examination of candidates for licensure in this Commonwealth. Ninety representatives of the District societies were in attendance.

The following named officers were elected: President, Albert C. England of Pittsfield; Secretary, Frank H. Smith of Hadley.

SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE MEETS

THE first meeting of "The Society for Experimental Biology and Medicine"—Massachusetts Branch—was held on Wednesday afternoon, October 13, at 4:30 P. M., in the Amphitheatre of Building C of Harvard Medical School. The program consisted of four papers each of which was well received.

The first paper was that of Dr. Frederick H. Pratt entitled "The Veratrin Response of Functionally Isolated Muscle Fibers." He stated as a result of his research work that superficial fibers of the frog's sartorius, stimulated with the pore electrode and having their contraction recorded by the mercury droplet method, exhibit a typical veratrin curve when the drug is applied locally in very dilute solutions (1:100,000 or weaker). That the quick stroke initiating the response conforms to the all or none law governing twitches which prevail in the absence of the veratrin modification. That the slow remainder of the curve does not rise above the twitch. It occurs in the same fiber which performs the twitch. Also that concurrent veratrin and non veratrin responses may be observed in the same field in different fibers, and may be recorded, on periodic stimulation, as simple twitches superimposed upon a slowly subsiding base line. And finally that under such conditions of excitation a summation of veratrin responses may occur, resembling the measured, step-like tetanus levels which are brought out by the same method with more frequent stimuli.

The second paper was "Certain Physico-Chemical Characteristics of Muscle Globulin" by Dr. William T. Salter, from the Dept. of Physical Chemistry in the Laboratories of Physiology, of Harvard Medical College. The fact that the significance of the protein constituents of muscle for the contractile process has long been recognized, but that the instability of these bodies, however, has rendered difficult their characterization, was stressed by Dr. Salter in his introduction. In Dr. Salter's work an ammonium chloride solution, rendered alka-

line by excess of ammonia, was used as solvent and this yielded solutions of muscle protein which, for several months, retained solubility in neutral salt solution. This ammonia buffered the acid products and thus prevented "denaturation."

When the dissolved muscle protein was subjected to $(NH4)_2SO4$, the muscle globulin was freed from the albumins and hemoglobin, and when with water, from the serum globulins which dissolve in more dilute salt solutions. Dr. Salter stated that the globulin obtained appears to be of a different type from the serum globulins, which are more soluble in water and require lower concentration of salt to effect solution. He reported that the solvent action of neutral salts on muscle globulin, however, is more pronounced than on hemoglobin. That the globulin like properties of this protein, therefore acquires additional significance, for whereas the solubility of hemoglobin is increased only six-fold by neutral salts, the solubility of this muscle globulin has been increased in his studies several hundred-fold. And that inasmuch as the solubility of the serum globulins are increased to at least this extent also, that lower concentrations of salt suffice to dissolve larger amounts of serum globulin than of muscle globulin. Such distinctions have a significance not only for separating these proteins but for understanding the electrically charged condition of their molecules and their physical state.

The third paper, "The Behavior of the Capillaries of the Lungs under Different Conditions" was presented jointly by Drs. Joseph T. Wearn, Joseph B. Barr, and W. J. German all of Harvard Medical School. These men have devised a method which permits a direct view of the vessels of the lung of a cat with the chest closed—thus enabling a study of the pulmonary circulation by direct observation and under physiological conditions. By their method a window of pleura is prepared on the chest wall, and another opposite this one is prepared on the diaphragm, so that by means of the latter a beam of light is thrown through the lung at a sufficient intensity to permit direct observation of the smaller arteries and veins and the capillaries under various conditions, with a microscope at the outer window.

They reported that in every instance the preparation was made under similar conditions but the appearance of the lung vessels showed marked variation. In some instances one or two capillaries were open on the wall of the alveolus, while in others six or eight were open and showed circulation in them.

The diameters of the capillaries also varied greatly.

Pressure upon the abdominal aorta caused new capillaries to open up, and at times arterioles, hitherto unseen, opened. And when the pressure was removed from the aorta many of the capillaries and in some instances arterioles closed and blocked the circulation through them.

They reported that thus far changes in the O_2 and CO_2 content of the air breathed by the cat, has not influenced the number of opening and closing, and further that technical difficulties with the method have delayed results of the effect of adrenalin, pituitrin, nitrites and other drugs, but that these studies were now under way.

The final paper, entitled, "Decerebrate Preparation (Maternal) for Direct Observation of Unanesthetized Mammalian Embryo, with some Observations on the Cerebral Circulation." was prepared by Dr. Frank F. Smith, John White Brown Scholar, and Assistant in Neuropathology, of Harvard Medical School. In order to study the living mammalian embryo with placental circulation intact and without the disturbing effects of anesthesia, Dr. Smith made decerebrate preparations of pregnant rabbits under light ether anesthesia. The embryo was exposed by incising the uterus (avascular portion opposite to the placental attachment), and by proper care was continuously observed for two or more hours. Dr. Smith reported that the smaller embryos (up to 13mm. crown-rump length) are almost completely transparent, except for liver and heart, and are particularly suited for transillumination (the heart beat, easily visible to the naked eye was 50-60 per minute in three preparations). For this purpose the embryo with placental circulation intact was placed directly upon the substage condenser of a binocular microscope and transilluminated from below.

Dr. Smith made the following preliminary observations on the cerebral circulation:

1. The growth of the cerebral vascular bed from the 9mm. crown-rump length to the 25mm. crown-rump length is striking.

2. In the smaller embryo the difference in caliber between main arterial trunk and capillary is relatively slight.

3. After few divisions the artery leads into a simple capillary network which again reunites to form a large vein without apparent anastomosis with other vessels.

4. Much more complicated is the cerebral vascular bed in embryos of 25mm. crown-rump length. Here the large arteries and veins are broader and the capillaries appear to be narrower than in the smaller embryos, while the complex capillary bed is separated from the main vessels by a larger number of branches of intermediate size.

5. In the smaller embryos under magnification of 20 diameters beautiful stereoscopic views

of the entire cerebral circulation were obtained. The deeply placed pulsating arterial flow is readily distinguished from the more superficial and steadily streaming venous flow.

6. With higher magnifications (100 to 335 diameters) the smallest capillaries appear as minute channels in the cerebral substance through which the red blood cells can be seen to pass but one at a time. Even the endothelial nuclei of the capillary wall may be seen in suitable fields.

This method makes it possible to observe the development and physiology of the cerebral circulation in the unanesthetized mammalian embryo with cranium intact.

MEETING OF THE WORCESTER DISTRICT MEDICAL SOCIETY

THE Worcester District Medical Society held its October meeting at the Worcester State Hospital as the guests of Dr. Bryan, Supt. of the Hospital, on October 13, 1926. At five-thirty President Trowbridge presided at a business meeting followed at six-thirty by a bountiful dinner served in the auditorium of the Hospital. One hundred and one members sat down to this dinner.

At half past seven, President Trowbridge introduced Dr. E. S. Lewis as the first speaker of the evening.

Dr. Lewis read a very interesting paper on "Scientific Physio-Therapy." Dr. Lewis emphasized the importance of knowing the scientific principles of electriety in the use of Physio-Therapy.

The second paper of the evening was presented jointly by Drs. McGeogan and Draper of the Hospital Staff. Their paper was a brief report and summary of the results obtained by the production of malaria in 50 cases of Paresis. These 50 cases had previously received anti-Luetic treatment. They reported several remissions which they thought were due to the malarial infection.

Their statistics showed that this line of treatment promised more relief from Paresis than had here before been given by anti-Luetic treatment alone.

Dr. Lewis' paper was discussed by Dr. Benj. Burley. The paper on Paresis was discussed by Dr. Jordan and by Dr. Berg of the Psychopathic Hospital in Boston.

The meeting adjourned at nine fifteen p. m.

EARL E. FIPPHEN.

THE SECOND ANNUAL MEETING OF THE TRUDEAU SOCIETY

THE second annual meeting of the Trudeau Society will be held on November 11, 1926, at 8.15 P. M., in John Ware Hall, The Medical Library, The Fenway, Boston, Mass.

The address will be by Dr. Richard C. Cabot, his subject being "Tuberculosis, From the Standpoint of Clinic and Autopsy."

The business of the evening will be the reports, and election of officers and the election of candidates for membership.

GEORGE S. HILL, *Secretary-Treasurer.*

BERKSHIRE COUNTY TUBERCULOSIS ASSOCIATION

PUBLIC meeting at the Municipal Hall, Dunham Street, Pittsfield, Mass., Thursday, November 4, 1926, at 7:30 P. M.

Three short talks by Dr. Parker Cort, Dr. H. D. Chadwick and Mr. Kiernan, of the Massachusetts Tuberculosis League, on the subject of Tuberculosis as affecting industry, children and the public are on the program.

THE NORFOLK DISTRICT MEDICAL SOCIETY

BELOW are the proposed meetings of the Norfolk District for the remainder of the year. Minor changes may be made in case of necessity.

November 30, 1926. Roxbury Masonic Temple. 8:15 P. M. Preventive Medicine. Drs. George H. Bigelow and Victor Safford. Particular mention will be made of seasonal diseases prevalent during the winter months.

January 25, 1927. Peter Bent Brigham Hospital. Dr. Harvey Cushing. Time of meeting and subject to be announced.

March 1, 1927. Roxbury Masonic Temple. 8:15 P. M. Dr. Robert B. Greenough. To be devoted to a talk on cancer with a resumé of the results of colloidal lead treatment.

March 29, 1927. Roxbury Masonic Temple. 8:15 P. M. Drs. F. S. Newell and F. J. Irving. The Modern Treatment of the Eclampsias and Toxaemias of Pregnancy. If time permits—The Modern Methods of Handling Prospective Caesarian Cases.

May 10, 1927. Annual Meeting. Details of meeting to be announced.

FRANK S. CRUICKSHANK.

MEETING OF THE METROPOLITAN DISTRICT OF THE MASSACHUSETTS DENTAL SOCIETY

A MEETING of the Metropolitan District of the Massachusetts Dental Society was held at the Hotel Westminster, Monday evening, October 25, 1926, Dr. Frank W. Rounds presiding. There was a large attendance both of dentists and physicians.

Arthur A. Cushing, M.D., read a very able paper showing from the point of view of the physician the harm that arises from the presence of infected pulpless teeth.

He mentioned the valuable research work that has been done on this subject by Dr. Wesley Price of Cleveland and at the Mayo Clinic.

He concluded from his clinical experience that all patients showing signs of focal infection should have their pulpless teeth removed irrespective of the appearance of the X-ray.

He felt that in people of good health pulpless teeth might be kept under observation provided the X-ray showed no disease at the apices.

Maurice E. Peters, D.M.D., said that on the whole he agreed with Dr. Cushing. He then went on to show from the dentist's point of view the disadvantage of the indiscriminate removal of pulpless teeth. He showed a large number of lantern slides of pulpless teeth with definite disease at the apices which had improved under treatment. Most of these teeth a physician would have insisted on having out even in a well person.

In the discussion that followed these papers it was quite evident that the dentists and the physicians are not in accord. Of course, it is true that the physician is seeing these teeth in sick people where he is trying to eradicate all possible sources of infection, whereas the dentist is seeing pulpless teeth in many people who are in good health.

There is doubtless truth on both sides. It is hoped that such open discussion will tend to bring the physician and dentist into closer understanding for the welfare of the patient.

MEETING OF THE BOARD OF REGISTRATION IN MEDICINE

THE registration of Dr. Kamel Khoury of Worcester was suspended for three months from date, for "gross misconduct in the practice of his profession."

The registration of Drs. John P. Russell of Springfield and Thomas Rice of Boston were each suspended for one month from date, for violation of the Prohibition Act.

MEETING OF THE FALL RIVER MEDICAL SOCIETY

THE first fall meeting of the Fall River Medical Society was held Wednesday evening, October 27, 1926.

Dr. Fred S. Thorne of Boston was the speaker of the evening, his paper being: "Ophthalmology, and Its Relation to the Physician in General Practice."

The discussion of the paper was opened by Dr. Thomas G. Clarke and was further discussed by Dr. William Pritchard and Dr. George L. Richards.

EDWARD L. MERRITT, M.D., *Secretary.*

THE MASSACHUSETTS MEDICAL SOCIETY

BRISTOL SOUTH DISTRICT

THE semi-annual meeting will be held in Fall River, at Hotel Mellen, on Thursday, November 4, 1926, at 5 P. M.

Speaker, Dr. William P. Murphy of Boston.

Subject, Some Recent Advances in the Treatment of Pernicious Anaemia.

The Censors will meet these applicants for membership at 3:30 P. M.:

R. R. Costa, J. Freedman, B. Garneau, G. W. S. Jones, E. C. Messer, W. W. Nelson, W. Paris, J. M. Peckham, G. P. Smith.

S. E. DONOVAN, *President.*
GEO. E. BORDEN, *Secretary.*

LAWRENCE GENERAL HOSPITAL

A SPECIAL meeting of the staff of the Lawrence General Hospital was held on Tuesday, October 26, at eleven o'clock, at the Nurses' Home.

The medical staff presented its recommendations to the management as to the operation of the Massachusetts Workmen's Compensation Act in its relation to this hospital.

LAWRENCE MEDICAL CLUB

THE monthly meeting of this club was held Monday evening, October 25, at Andover Manse, Andover, Mass., with Thomas W. Murphy, M.D., of Lawrence. The chairman for the evening was Rolf C. Norris, M.D., of Methuen. A paper entitled "Recent Development in Treatment of Hip Fractures" was presented by Frederic J. Cotton, M.D., of Boston.

The club entered upon an interesting discussion of the practical workings of the Workmen's Compensation Act in view of the hearings now being held by the Special Committee as ordered by the latest Legislature.

SOCIETY MEETINGS

DISTRICT MEDICAL SOCIETIES

Essex South District Medical Society

Thursday, November 4, 1926—Censors meet for the examination of candidates at the Salem Hospital, 3:30 P. M.

Wednesday, December 1, 1926—Beverly Hospital. Clinic, 5 P. M.; supper 7 P. M. Dr. Jason Mixter, "Diagnosis and Treatment of Cerebral Lesions." Discussion by Drs. Randall and McDermott of Salem, ten minutes each.

Wednesday, January 5, 1927—Deer Cove Inn, Swampscott. Dr. James S. Stone, "Differential Diagnosis of Acute Abdominal Conditions in Children." Discussion by Drs. O'Keefe of Lynn, Nichols of Danvers and Walter Phippen of Salem, five minutes each.

Wednesday, February 2, 1927—Hawthorne Hotel, Salem. Dr. H. H. Clute of the Lahey Clinic, "Differential Diagnosis and Treatment of Thyroid Disease." Discussion by Drs. Johnson of Beverly and Field of Salem, ten minutes each.

Wednesday, March 2, 1927—Lynn Hospital. Clinic, 5 P. M.; supper, 7 P. M. Dr. George Minot, "Pernicious Anemia, with Special Reference to Liver Diet." Discussion by Drs. Sargent of Salem and Reynolds of Danvers, ten minutes each.

Wednesday, April 6, 1927—Danvers State Hospital. Clinic, 5 P. M. Dr. Allan W. Rowe, subject to be announced. Followed by dinner. Discussion by Drs. Wood of Hathorne and Kline of Beverly, ten minutes each.

Thursday, May 5, 1927—Censors meet for examination of candidates at the Salem Hospital, 3:30 P. M.

Wednesday, May 11, 1927—Annual meeting. The Tavern, Gloucester. Speaker and subject to be announced later.

Suffolk District Medical Society

Meetings of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library, 8 The Fenway, Boston, at 8:15 P. M., as follows:

November 17, 1926—Surgical Section. "The Relation of the Urologist to the General Practitioner," Dr. Henry B. Bugbee, New York City.

December 15, 1926—Medical Section. "Diagnosis and Treatment of Scarlet Fever and Certain Aspects of Other Contagious Diseases," Dr. Edwin H. Place.

January 26, 1927—General meeting in association with the Boston Medical Library. "Medical Work at the Metropolitan Life Insurance Company," Dr. Augustus I. Knight, Medical Director, Metropolitan Life Insurance Company.

February 23, 1927—Surgical Section. "Clinic on Neurological Cases at the Peter Bent Brigham Hospital," Dr. Harvey Cushing.

March 30, 1927—Medical Section. Subject and speaker to be announced later.

April 27, 1927—Annual meeting. Election of officers. "Medical Education in the Orient and Occident," Dr. David L. Edsall, Dean, Harvard Medical School.

BOOK REVIEWS

Roentgen Interpretation. By G. W. HOLMES and H. E. RUGGLES. 326 pages, 226 illustrations. Third edition, revised. Philadelphia: Lea & Febiger. 1926.

To those who are acquainted with the previous editions of this volume no further introduction is necessary. This edition has been enlarged to meet recent developments in roentgen interpretation, but the authors are still to be congratulated on their ability to concentrate so much "meat" in so small a volume. The reviewer was particularly impressed by the almost total lack of unnecessary words, which is not a common failing in most medical text books. The title page states that the volume is "a manual for students and practitioners." The student cannot fail to acquire a thorough foundation in the subject.

The illustrations selected are not intended as an atlas with which the student can compare his own films, but rather to illustrate the principles of diagnosis as enumerated in the text. The subject matter is admirably arranged for quick reference and there is a complete bibliography at the end of each chapter.

A brief introduction discussing some of essential principles of technique.

Chapter 1 describes confusing shadows and artifacts such as lines mistaken for fractures, calcifactions, concretions, etc.

Chapter 2 is devoted to anatomical variations, and artifacts. It contains table of the appearance of centers of calcifications, union of the epiphysis, etc., for the various bones.

Chapter 3 covers fractures and dislocations.

Chapter 4, on bone pathology, covers infections, bone tumors, and disease of nutrition.

Chapter 5, on the skull, is very complete, including ventriculograms.

Chapter 6 is on the spine. In the paragraph devoted to "sacro-iliac slips" the author states "clinicians and surgeons tend to read more pathology into these joints than experienced roentgenologists are willing to admit." This subject is one of the bugbears of industrial roentgenography, and might well deserve a chapter of its own.

Chapter 7, on joints: Tendons and bursae covers a subject most confusing to the beginner. The authors have been very clear and concise.

Chapter 8, on the chest, is authoritative. It covers the heart and lungs in detail, under the work on the former having been developed in the authors' own clinic.

Chapter 9, on the gastro-intestinal tract, contains valuable diagrams illustrative of typical lesions.

Chapter 10 covers the genito-urinary tract.

Chapter 11 covers fluoroscopic technique, including the localization of foreign bodies.

In the reviewer's opinion, this volume is one of the best manuals of X-ray diagnosis which has yet appeared, and should continue to hold the permanent position gained by the previous editions.

Electrothermic Methods (Desiccation and Coagulation) in the treatment of Neoplastic Diseases. By J. DOUGLAS MORGAN, B.A., M.D. Published by F. A. Davis Company, Philadelphia. 172 pages. 36 illustrations. Price $2.50 net.

This a concise little book which gives the essential facts connected with the destruction of new growths by electrothermic methods. The author begins by describing the types of current employed, and the various makes of apparatus used. He then takes up the different surgical lesions which may properly be treated by this method.

A review of his directions for treatment gives one the impression that the author has had considerable practical experience and is correct in suggestions for treatment, but, like all epitomies of treatment, this book makes the subject appear too simple and too free from pitfalls. The author apparently uses only the needle electrode for electrocoagulation, whereas there are many cases in which other types of electrodes give better results. The claims made for this method of destroying neoplasms are not excessive. The author is not a fanatic, but looks at the subject from a comprehensive point of view. The book is a safe guide as far as it goes; it indicates to the beginner the general line of treatment to be employed. It leaves many gaps to be filled in from the results of one's own experience.

Textbook of Urinalysis. By IVAR BANG, Lund. Second Edition, Revised by PROF. Dr. F. v. KRUGER, Rostock. München: J. F. Bergmann. 1926.

The first edition of this manual by the celebrated Swedish investigator was published in 1918. On account of his untimely death, this second improved and completed edition has been prepared by von Krüger, who has extended the chapter on sediment to include organic sediments and their examination. The number of the text illustrations has been increased to 19. In 141 pages the subject is elaborately covered, but though valuable and meritorious the book is hardly likely to interest busy American clinicians.